Journal *of* Research *in* Music Education

A Publication of the

MUSIC EDUCATORS NATIONAL CONFERENCE

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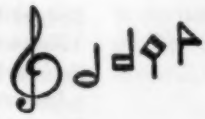

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An Experiment in Teaching Children To Read Music with Shape Notes

GEORGE H. KYME

A CRUCIAL PROBLEM facing our conscientious elementary music teachers is how to teach successfully the skill of reading music at sight. This is a report of an experimental study designed to compare the effectiveness of several approaches to music reading, including one making use of shape notes.

In an article in the *Journal of Research in Music Education* Irving Lowens and Allen P. Britton suggest that, had Lowell Mason adopted the shape note system of William Little and William Smith as set forth in *The Easy Instructor* (1798), "we might have been more successful in developing skilled music readers and enthusiastic amateur choral singers in the public schools."[1] The hypothesis upon which the present experiment is predicated is that singing with shape notes will increase the accuracy of pitch and syllable naming and therefore will be reflected in the superiority of students using this method of learning to read music over those who learn by the use of the usual methods. Stated as a null hypothesis, the experiment attempted to show that there would be no difference in the music reading ability of control groups of children taught to read by orthodox methodologies when compared with the music reading ability of experimental groups taught to read using the seven-shape notation developed by Jesse B. Aikin in *The Christian Minstrel* (1846), a notation which is derived from the four-shape system of *The Easy Instructor*. Both systems are still in use in Southern churches.

[1]Irving Lowens and Allen P. Britton, "*The Easy Instructor* (1798-1831): A History and Bibliography of the First Shape Note Tune Book," *Journal of Research in Music Education*, I (Spring 1953), 32.

Experimental Procedure

Time. The experiment was conducted during fifteen recitation periods of thirty minutes each in the fall semesters of 1955 and 1956. The results show the effect of three weeks of concentrated reading experience.

Subjects and Teachers. The investigation involved 183 fourth and fifth grade pupils from schools of varied socio-economic backgrounds in the San Francisco Bay area. In each city, schools were chosen that had more than one section of each grade in the school; thus, each school furnished a control group and an experimental group whose subjects might be said to possess common backgrounds. No comparisons were made among the schools as such. The determination as to whether a class was to become a control or an experimental group depended entirely upon chance factors. At least two classes were used for each teaching method.

In one experimental situation, two fifth-grade music classes were chosen because they were taught by the same music specialist through an interchange of duties with the other fifth-grade teachers. It was possible, therefore, in

designing this experiment to set up situations where the same teacher could teach a control group and an experimental group.

Another usable experimental situation was provided by a teacher who taught one group of children to read music using *so-fa* syllables by the "second-verse-to-a-familiar-song technique" one semester, and then taught an "equated" group another semester using the shape note technique. The same teaching material was used and the order of presentation was identical. The music periods were held constant at thirty minutes for each and the total number of instruction periods in music reading for each class was fifteen. The above method was designed to hold constant the *method of teaching* the reading of music to the paired groups.

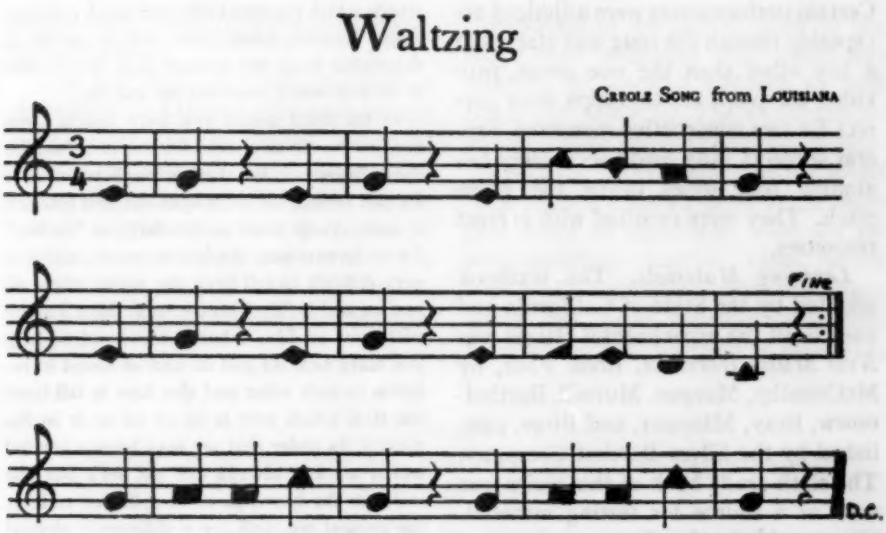
Theoretically, the variable, *the effectiveness of the teacher,* was held constant in these first experimental situations, since the same teacher taught both the experimental and the control groups. However, it is questionable whether a good teacher can teach by each of two methods equally well. Therefore, in another school, the subjects were again "equated" as to sections and a very efficient classroom teacher was asked to use the same reading songs as the experimental groups, but to teach them in the way she was accustomed, that is, by using syllables or numbers to define the pitch relationships. The investigator taught the remaining section using the experimental technique employing the shape notes.

A third experimental situation was established to test the effect of mixing the teaching techniques within a given group. In one of the two sections of a school, the subjects were given training using numbers to read, tested, and then given the shape note system employing *so-fa* syllables. In the other section, the order was reversed and the shape notes were taught first, followed by instruction in the number system.

In this experiment, those students who had studied an instrument for six months or more were classified as a separate group. Their initial scores served as achievement scores in sight singing as a result of instrumental instruction. This group was given further instruction in music reading in one or two of the three methods being taught in this investigation as further evidence of the merits of each method to further the reading skill of students previously initiated to the demands of the medium. The scores of these subjects were not treated as a part of the groups taught to read music wholly in the general music singing class.

Measurement. Sight reading in this experiment was defined as the ability to sing at sight with acceptable pitch and recognizable time values, selected songs in the key of C, F, or G as chosen from the *New Music Horizons.* Since the differences in method were primarily concerned with the determination of pitch relationships and since the same techniques of teaching rhythms were employed by all of the teachers in this experimental situation, in the final analysis of errors, rhythmical discrepancies were not penalized if the continuity and onward flow of the music was maintained. Likewise, discrepancies in intonation were minimized. If a subject reproduced a pitch within a half semi-tone of the required pitch, that is, so that the melody was recognizable, the response was judged as correct.

Although recognition was given to concomitant learning, it was agreed that any evidenced skill that might be



a corollary of music reading would be recorded but not tabulated in the final analysis of growth in reading ability. Thus, it was agreed that skill in notating songs which the classes might create would be an indication of musical growth, as would those insights having to do with the structure of music for the purpose of creating songs with coherence.

Knowledge of harmony to the extent that an elementary school child might use the autoharp as an accompaniment instrument for the classroom singing was also accepted as a desired corollary of the sight reading skill but was not included in the measurement of music reading ability. However, an evaluation was made of the ability to choose the proper chords and to produce these chords on the autoharp. Since much of our music consists of chords in various positions, the recognition of chords as such might well be evidence of reading ability as well as an accompaniment skill. The results of this evaluation were treated as concomitant learnings, however, and are discussed as such.

Two estimates of sight reading ability were obtained for each subject: a *pre-score* and a *final score recorded by tape recording*. The scores used as a measure of music reading ability were the number of notes correctly sung of a song found on page three of the sixth-grade book of the *New Music Horizons* series. This song contains 44 notes of which two were given as starting tones. Quarters and halves comprise the song, which is written in ¾ meter in the key of C Major and consists primarily of scale-wise progressions and intervals of the third (broken chords). The same song was used for pre-test and final testing.

After proper motivation, the investigator gave the key tone of the piece, sang the tonic chord, and then sang the first two tones of the song for each subject. It was agreed that the investigator should reproduce the correct pitch when an error was committed to re-orientate the subject and to maintain the proper pitch relationships. A response to be considered correct, however, was in every case an *unaided* one.

Certain performances were adjudged acceptable though the song was started in a key other than the one given, provided the pitch relationships were correct for two consecutive measures. Several subjects sang quite accurately beginning four tones below the given pitch. They were credited with correct responses.

Learning Materials. The textbook adopted by the State of California and used in all the experimental classes was *New Music Horizons,* Book Four, by McConathy, Morgan, Mursell, Bartholomew, Bray, Miessner, and Birge, published by the Silver Burdett Company. The sixth-grade book of this series was used as a source for testing material. This provided unfamiliar songs but presented them in a manner to which the students had become accustomed through using Book Four. Supplementary material was used but to a limited degree.

Experimental Transcript. The following transcript is from a tape recording of an experimental group lesson:

Learning to read music follows very much the path of learning to read from your reader. When you were quite young and the neighborhood dog came down your walk, your mother quite likely said, "Here, doggie, nice doggie! Baby see the doggie? This is a Doggie." She may have called it a bow-wow or maybe a dog, but you learned the word *dog* and now when you hear it an image of a dog comes to mind. These words which represent the real thing are called your vocabulary. Now when you came to school and you saw a group of words in your reader, one of which was d-o-g, and your teacher called this symbol *dog,* again the image of a dog came forth and you learned to associate the printed word with the real thing. This, we know, is reading.

So it is with music. If you sing a pitch and your teacher gives it a musical name of *do,* or *mi,* or *so,* you soon begin to associate these vowel sounds, *do, mi,* and *so* with the pitches being sung. This is your musical vocabulary—words which represent different pitch relationships. Reading music, then, will be merely to determine from the printed page which note is *do* and which ones are *mi* and *so.*

In the third grade, you were taught these musical words as a second verse of a familiar song. However, it takes so much practice to fix this feeling for *so-fa* syllables and pitch, it is quite likely your vocabulary, or "feeling" for *so-fa-ness* may not be too secure; and it is very difficult to tell from the music where *do* and *mi* and *la* "live" on the staff. May I share with you an idea I have discovered to help you learn how *do* and *mi* and *so* sound in relation to each other and also how to tell from the staff which note is *do* or *mi* or *la* in the music? In order that we may have a symbol which we can always call *do,* let's put the scale on the board in *so-fa* syllables and for the present we shall use a differently shaped note head for each syllable.

First we shall make strong, firm *Do* a peaked mountain top!
Then rousing *Re* can be a coffee cup.
Sweet-sounding *Mi* is a diamond shape.
Half-square *Fa* is known as "The desolate."
Round *So,* bright like the sun
Full-square *La,* the "weeping tone."
Piercing *Ti,* shaped like a top, and
Finally *Do*; eight notes before we stop
Sing this ladder of notes we call a scale!

do, re, mi, fa, so, la, ti, do

(Sung while instructor points to the shape notes.)

Summary of Results

Table 1 presents the results of comparing the experimental method, teaching with shape notes, and the traditional methods used with the three control groups. Since there was no statistical significance in the difference of the pretest means for any of the equated groups, it may be assumed that the

groups were drawn from the same musical population.

The results of the post instruction test reveal that the experimental groups were superior to the control groups in each of the four paired situations. The probability that the differences in the means would occur solely through chance factors was less than one in a hundred in each of the four cases. Therefore, the null hypothesis must be rejected.

Evidence of the compatibility of the shape note technique with traditional methods of teaching children to read music is noteworthy. The instrumentalists who were given instruction in singing with the use of shape notes improved their reading ability almost in the same proportion as those who were not instrumentalists. Another class, which was given instruction with the shape notes and *so-fa* syllables and then denied their use, was told to substitute

TABLE 1

COMPARISON OF PRE-TEST AND POST-TEST SCORES OF EXPERIMENTAL AND CONTROL GROUPS

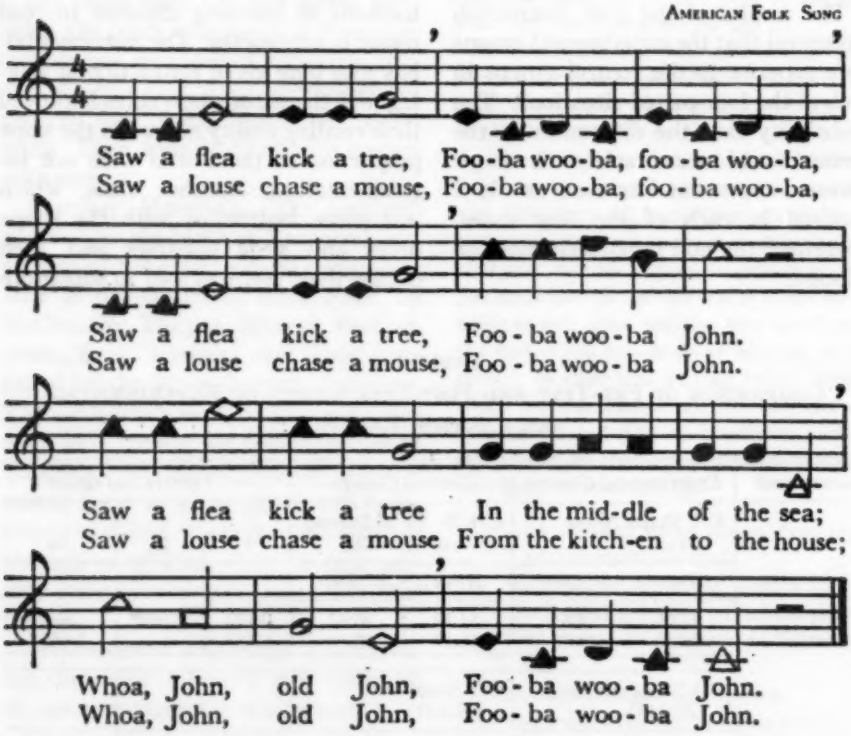
Measurement	*Experimental Groups*		*Control Groups*		*t scores and ratios*		
	E-1 Shape Notes (N=31)		C-1 *So Fa* as Second Verse (N=38)		t	t_{05}	t_{01}
	Mean	*St. Dev.*	*Mean*	*St. Dev.*			
Pre-test	12.00	5.81	12.39	10.92	0.190	2.000*	____
Post-test	26.38	11.33	16.47	10.39	3.753	____	2.660*
	E-2 Shape Notes (N=35)		C-2 Numbers (N=31)		t	t_{05}	t_{01}
	Mean	*St. Dev.*	*Mean*	*St. Dev.*			
Pre-test	9.65	9.48	6.96	8.68	1.206	2.000*	____
Post-test	32.60	9.76	11.03	11.15	8.328	____	2.660*
	E-2 Shape Notes (N=35)		C-3 Instrumental Instruction only (N=25)		t	t_{05}	t_{01}
	Mean	*St. Dev.*	*Mean*	*St. Dev.*			
Pre-test	9.65	9.48	11.72	10.35	0.793	2.000*	____
Post-test	32.60	9.76	13.68	9.87	7.361	____	2.660*
	E-3 Instrumentalists taught with Shape Notes (N=23)		C-3 Instrumental Instruction only (N=25)		t	t_{05}	t_{01}
	Mean	*St. Dev.*	*Mean*	*St. Dev.*			
Pre-test	11.00	9.00	11.72	10.35	____	____	____
Post-test	29.60	9.70	13.68	9.87	7.539	____	2.690**

* For 60 degrees of freedom

** For 45 degrees of freedom

The pre-test t is consistently below the figure for the .05 level of significance and the post-test t above the .01 figure. There is, therefore, probably no difference in the pre-test means but definitely a difference in the post-test results.

Fooba Wooba John

American Folk Song

Saw a flea kick a tree, Foo-ba woo-ba, foo-ba woo-ba,
Saw a louse chase a mouse, Foo-ba woo-ba, foo-ba woo-ba,
Saw a flea kick a tree, Foo-ba woo-ba John.
Saw a louse chase a mouse, Foo-ba woo-ba John.
Saw a flea kick a tree In the mid-dle of the sea;
Saw a louse chase a mouse From the kitch-en to the house;
Whoa, John, old John, Foo-ba woo-ba John.
Whoa, John, old John, Foo-ba woo-ba John.

numbers for the syllables because numbers were preferred in that school system. This group when retested at the end of the semester actually regressed slightly, from 32 to 28 notes. Still the ultimate score was superior to that of a comparable group taught only with the use of numbers. It appears, therefore, that one can justify the use of this notational system even in those situations where the teacher is committed to one or another "system" of teaching music reading.

Concomitant Learnings. In addition to the measured skill in singing at sight, the experimental groups seem to excel in other ways. The students in the experimental sections were the only ones to develop skill in notating their own created melodies. They alone attained a grasp of the harmonic structure in music necessary to create an autoharp accompaniment. The most interesting observation of all, however, was found in the seventh-grade registrations and requests for electives. At the junior high school to which three control and experimental groups were promoted, 63% of the students who were in the experimental group enrolled in seventh-grade glee club—an elective, before-school course. The average percentage from other elementary schools entering the school is less than 20%.

In the light of this evidence, music educators may wish to reappraise the shape note system of teaching sight-singing, a system in use for over 150 years in the Southeastern United States.

University of California, Berkeley.

The Song Choices of Children in the Elementary Grades*

DOROTHEA BLYLER

THE MUSICAL interests of children represent only a momentary cross-section of their continuing concerns. Yet they are important in education for they provide an excellent place from which to begin musical education. As Gates and his co-authors point out, "It would be shortsighted, of course, for the school merely to feed the present interests and motives of its pupils. The wants, interests, and attitudes of the individual at any moment are the means of making the experience meaningful and worthwhile. Out of these experiences, however, new interests and more mature purposes and values should emerge."[1]

Between the two extremes of catering completely to the wishes of children and arbitrarily imposing on them the standards of adults lies the happy mean of artful teaching and guidance. This happy mean involves planning a curriculum in which the experiences and activities are best from the standpoint of the children's interests and welfare and also best from the standpoint of musical art. Their tastes and interests must be accepted and respected but they must be broadened and refined.

This is a report of a study which sought to analyze the song choices of children in Grades II to VI inclusive. Specifically, ten questions were studied:

1. *What songs do children at each grade level prefer to sing?*
2. *Do these songs possess common musical factors?*
3. *What part does maturation play in shaping children's choices?*
4. *What is the effect of words on the choice of songs?*
5. *Do children prefer long or short songs?*
6. *Do the songs possess dynamic and rhythmic variety?*
7. *Do the songs contain repetitions of phrases or words?*
8. *What are the sources of the songs? That is, are they folk songs, songs composed especially for children, melodies by famous composers, or songs contrived to teach technical problems?*
9. *What are the sources of the poetry used in the songs? Are the poems by recognized composers of children's poetry, are they of folk origin, or, again, verses contrived for special purposes?*
10. *Do the song choices of boys differ from those of girls?*

It was not within the scope of the study to determine why children like or dislike certain songs. Any previous attempts to do so have resulted in putting words into the mouths of the children and have in no way indicated what the children actually felt or thought about the music. It was also not our purpose to criticize teaching methods as a factor in their choices.

In explaining the musical preferences

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*This article is based upon information contained in the writer's Ed. D. dissertation of the same title (University of Illinois, 1957).

[1]Arthur I. Gates and others, *Educational Psychology* (New York: MacMillan Company, 1948), pp. 302-303.

of the children four hypotheses were proposed:

Hypothesis I: There are common musical factors present in the songs that children prefer to sing.

Hypothesis II: There are common musical factors present in the songs that children dislike to sing.

Hypothesis III: The song choices are influenced by the words of the songs which correspond to the known interests of children of different levels of maturation.

Hypothesis IV: Boys' choices are different from those of girls.

Two song series were used as bases for the study as a whole, *New Music Horizons*[2] and *The American Singer*.[3] These were selected because they are widely accepted text books. If the characteristics of the songs chosen from each series were similar then more adequate proof or disproof of the hypothesis would be obtained. The publishers furnished lists of schools using these books as basic texts. The towns and cities were located in Illinois, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, Tennessee, and Wisconsin. Each school was assigned one grade for investigation. The results of the study are based upon the returned questionnaires of 9007 children in the following distribution:

Grade II	556
Grade III	754
Grade IV	2653
Grade V	2647
Grade VI	2397

The response from the first grade was negligible, and those from the second and third grades were not great. This was due, no doubt, to the lack of maturity on the part of the children. The data were used but great caution was exercised in their interpretation.

Since the only feasible technique to investigate children's interests on such a wide scale was the use of a questionnaire, such an instrument was devised. The children were asked to give (1) the name of their city or town, (2) their sex, (3) their grade level, (4) the grade level of the song book they were using, (5) three songs *in the book* that they liked to sing in the order of preference, (6) three songs *in the book* that they did not like in the order of distaste, and (7) three songs they liked that were not in the book. These latter could have been learned at home, in church or Sunday school, at club meetings, or from the radio, television, or juke box.

The questionnaires were tried out in the public schools of Macomb, Illinois. The two teachers reported that the children experienced no difficulty in answering them and could do so well within the time allotted to the music period. They gave no suggestions for improving either the questionnaire or the instructions to the teachers who were to administer them. A packet containing an explanatory letter, an instruction sheet and thirty-five questionnaires was then sent to the teacher or supervisor of elementary school music in each of the towns on the publishers' lists.

The songs listed on the returned questionnaires were tabulated according to the frequency of choice in each grade for each series of books. Tables showing the children's favorite songs in one, two, three order were constructed. The same was done for the songs they disliked. Those learned out-

[2]Osborne McConathy and others, *New Music Horizons* (Chicago: Silver Burdett Company, 1944, revised in 1953).

[3]John W. Beattie and others, *The American Singer* (Chicago: American Book Company, 1947, revised in 1955).

side of school were combined and listed in single tables for each grade.

The first twenty songs from the lists of liked and disliked songs from *The American Singer* and *New Music Horizons* were analyzed in respect to such musical factors as melodic contour, tonal progression, vocal range, tonality, mode, modulations, rhythmic patterns, length of songs, dynamic possibilities, tempo, harmonic content implied or actually used in the accompaniments, repetition of motives or phrases, and phraseology. The sources of the songs were categorized as composed by well-known composers, composed by lesser-known composers, folk songs (American, foreign), and contrived songs.

The characteristics of the preferred songs were compared to discover any similarities. The same was done for the songs the children found distasteful.

The texts of the songs were examined with respect to subject matter and source. Poems were classified as composed by recognized authors of children's poetry, of folk origin, from anthologies of children's poems, or contrived for special purposes. The results of this analysis were then compared with the reading interests and poetry choices of children in the corresponding age groups as reported in studies made in this field.[4]

The songs learned outside of school were treated in another fashion. They were not submitted to musical analysis. Instead they were classified as to types: jazz, patriotic songs, school songs, club songs, folk songs, religious songs, and so on.

The preferred and disliked songs in the textbooks and the favorite songs learned from other sources were retabulated according to the sex of the children in order to study the similarities and differences in the choices of boys and girls.

Finally, generalizations were formulated that should be of value to teachers, supervisors, editors, and composers of music for children.

Of all the children answering the questionnaires, only one child did not like music. One boy in the fifth grade failed to express a preference for any song, and the space for the rejected songs was filled to overflowing with songs he did not like. Many children, however, chose three favorite songs but added that they liked them all.

What do children like to sing? First of all, the evidence is not overwhelming that they prefer folk songs to composed songs. Table I gives the numbers of textbook songs in each category which the respondents indicated as preferred and as disliked. Of the songs preferred by children in the primary grades, a majority (61%) were of the composed variety. Moreover, the song series used (*New Music Horizons*) contains about twice as many composed songs as folk songs, and the percentage of folk songs preferred (39%) exceeds slightly the percentage available (33%), while the percentage disliked (26%) is somewhat smaller than the percentage available. Thus, on the basis of equal chances to learn folk songs and com-

[4] Jean Betzner, *Content and Form of Children's Original Compositions Dictated by Children from Five to Eight Years of Age* (New York: Teachers College, Contributions to Education, #442, 1930); Ruby Ethel Cundiff, "Children's Reading Interests," *Peabody Journal of Education* (May 1948); Miriam B. Huber, "Children's Choices in Poetry," *The Elementary English Review*, IV (January 1927), 24-27; Herbert C. Rudman, "Interrelationship Among Various Aspects of Children's Interests and Informational Needs and Expectations of Teachers, Parents, and Librarians" (unpublished Ed. D. dissertation, University of Illinois, 1954); R. I. Thorndike, *Children's Reading Interests* (New York: Bureau of Publications, Teachers College, Columbia University, 1941).

posed songs, the children liked folk songs only a little better and disliked them only a little less than they did composed songs.

The children in the intermediate grades had comparatively more folk songs to choose from, though the total number was still less than that of the composed songs in the textbooks they used. Of the total number of songs these children listed as preferred, only the smallest majority (51%) were folk songs. And of the songs they listed as disliked, folk songs comprised a substantial majority (65%). The evidence gives no support to the frequently expressed belief that folk music possesses extraordinary attractions for children.

TABLE 1

THE PROPORTION OF TYPES OF SONGS CHOSEN

		Composed	*Folk*	*Total*
Primary grades				
NMH*	Preferred	22 (61%)	14 (39%)	36
	Disliked	17 (74%)	6 (26%)	23
Intermediate grades				
NMH	Preferred	23 (52%)	21 (48%)	44
	Disliked	12 (33%)	25 (67%)	37
AS#	Preferred	21 (46%)	25 (54%)	46
	Disliked	16 (37%)	27 (63%)	43

*NMH—New Music Horizons
#AS—The American Singer

The preferred songs came from many sources. Twenty-four countries contributed folk songs, but the children preferred by a large margin those from the United States. The composed songs represented the work of eighty-three poets and sixty-nine composers. Twenty-six of the poets were well known for their contributions to children's literature. However, few of the lyrics were to be found in anthologies of children's verse; many had been composed especially for the series. Very few of the composers were of world renown. Some of the songs were the work of well-known figures in music education, in many cases editors of the series.

The evidence indicated that song choices are influenced by the texts of the songs. The primary children in almost every case liked lullabies, and songs about birds, animals, and fanciful characters and situations. They definitely rejected songs dealing with prosaic, everyday experiences. Humorous songs proved attractive at all grade levels. Interesting to note was the change in the children's sense of humor. Amused at first by songs of a completely unsubtle nature, the children gradually developed interest in rather long, ridiculous ballads personifying birds and animals. Interest in such nonsense reached its peak in the fourth grade. Thereafter the humorous songs, while not really subtle, were quieter and less obvious. Heroes definitely made their appearance in the fifth grade. Religious songs were generally present throughout the grades, but interest definitely spurted in the sixth grade. So did interest in love and romance. Cowboy songs reached their peak of interest in the fourth grade. Patriotic music was much in evidence in every grade, but the children in the fifth grade thrilled to it the most. Each age group had its special interests. A new interest evolved and grew as an earlier one declined and was sloughed off.

The types of music the children learned outside of school and liked to sing were remarkably similar for all grades. Jazz topped the lists with overwhelmingly large numbers of titles. This was followed in each case by religious music. The second grade children then chose songs about animals and birds and folk songs in that order.

In the third grade, folk music and patriotic songs were the next choices. The fourth and fifth grade children chose the same categories but reversed the order. As in the music chosen from the textbooks, interest in patriotic and service songs reached its peak in the fifth grade. Interest in religious music grew in strength as the children advanced; more songs were listed by each succeeding grade. One religious song appeared on all lists—"Jesus Loves Me." However, it gradually decreased in favor. Such was also the case with "Davy Crockett." The prime favorite of second and third grade children, it dropped in rank in the next two grades and did not appear on the list for the sixth grade. "Yellow Rose of Texas" maintained a steady popularity. Such was the power of radio, television, and juke box. One interesting thing grew out of this portion of the study. From forty-five to fifty children in each grade were given an opportunity to tell why they liked these pieces. The youngest children were quite uninhibited and readily described their reactions to the music. With each successive grade, however, the children were less able or willing to express their feelings about the matter.

The fourth hypothesis suggested that boys' choices are different from those of girls. The study revealed that there were differences, but they were not as great as one might imagine. In general, boys and girls like or dislike the same songs. Keep in mind that each group chose twenty songs they liked to sing and twenty they disliked. In every grade from twelve to seventeen of the songs in each category were chosen by both groups. In Grades II through V they agreed on the first one or two best-liked or most disliked songs, but aside from these, there was little agreement on the preference or rejection rank of the others. In the sixth grade there was no unanimous choice.

The more specific likes and dislikes of boys and girls may be seen in Table II. These again are quite similar. If there were any differences they lay in the treatment of the subject rather than in the subjects themselves. On the whole, the girls gravitated toward the more lyric poems and the boys toward the more vigorous ones.

It would seem from the foregoing discussion that the text of a song is the only factor determining its choice as a favorite song. It is a big factor but not the only one. This was indicated by two things: (1) the discussion of the "outside" songs with groups of children, and (2) an analysis of the preferred and rejected songs.

The songs learned outside of school and chosen as favorites were played for the children in Grades II through VI of the Laboratory School of Western Illinois University. Each grade consisted of from forty-five to fifty children. They sang the songs and made any response they wished, and were then asked why they liked them. Each succeeding age group found it more difficult to put into words their feelings about music. In any case, however, the attractiveness of the tune was mentioned as often as the words or the rhythm. In most cases a song was thought of as a unit and any attempt to dissect it was resisted. It was "just a real good (or bad) song."

In addition to discovering what children liked or disliked to sing, the object of the research project was to prove or disprove the truth of the first two hypotheses: There are common musical factors present in the songs that children prefer to sing and common factors in the ones they reject!

TABLE 2

THE CHOICES OF BOYS AND GIRLS

Grade		*Prefer*	*Dislike*
II	Boys	Songs about our country, animals, nature, fanciful situations, cowboys	Songs about everyday experiences and objects
	Girls	Songs about our country, animals, nature, flowers, people	Songs about everyday experiences and objects, nursery rhymes
III	Boys	Songs about our country, pioneers, the West, humor, lullabies	Songs about everyday experiences and objects, animals, slogans, and moralizing
	Girls	Songs about our country, God, birds, love, humor, lullabies	Songs about everyday experiences and objects, animals, slogans, and moralizing
IV	Boys	Songs about our country, the armed services, nonsense (birds and animals), cowboys	Songs of love and lullabies
	Girls	Songs of our country, nonsense (birds and animals), God, and lullabies	Songs about animals
V	Boys	Songs of our country, the armed services, humor of a more subtle type, heroes	Ballads about birds and animals
	Girls	Songs of our country, humor of a more subtle type, love, God	Ballads about birds and animals, cowboy songs
VI	Boys	Songs of our country, love and romance, heroes, God	Songs of nature, pioneers, nonsense
	Girls	Songs of love and romance, our country, God, nature	Ballads, birds and animals, humor and nonsense

The study proved one thing. An objective analysis sheet is of no value in describing a song. Listing the meter, mode, phrase pattern, melodic contour, and type of cadence gives only a skeleton of a song. The heart of the song is still absent.

What is a song? Ideally it is a perfect union of words and music. From the child's standpoint the words must express something he understands and feels, and the music must further express and enhance the thought and emotions involved. One child sensed this in his response to "Battle Hymn of the Republic." In delight and wonder he said, "The words and music, they go together, they *fit*." Each song had to be sung or heard before its value could be assessed. It was in this singing and listening that the differences between the liked and disliked songs became apparent, for there were differences.

The texts of songs the children preferred to sing dealt with subjects in keeping with the known interests of their age group. The melodies were expressive of the words, were varied in rhythm and contour, and possessed strong melodic movement, strong climaxes, and definite points of repose. The children liked songs with well defined cadences that ended on the tonic. A judicious amount of repetition was allowable, and the major mode was preferred. The harmonic backgrounds

of the folk songs consisted mainly of the primary chords, but those of the composed songs were rich and varied, extending in some cases into the field of chromatic harmony. Most of these songs were miniature art songs with truly expressive and descriptive accompaniments. The songs were also capable of more than an average amount of dynamic variation. More part songs were chosen as the children progressed through the intermediate grades.

The disliked songs were, on the whole, inferior to the preferred songs. The words were often trite and out of line with the interests of the age groups. It is suggested here that some of the songs in the textbooks may be misplaced; disliked by one grade, they might possibly be liked by another. While some of the melodies were moving, some were also quite static, especially if they made too frequent use of the home tone or the tonic triad. The most disliked ending was the imperfect authentic cadence. Songs that failed to make a satisfactory return to *do* were rejected. Many of these songs were repetitious to the point of being tedious, and incapable of much dynamic variation. The harmonic backgrounds of the folk songs, as usual, consisted of primary chords. While the composed songs used more extended harmony, the majority of the accompaniments merely offered block chords below the melody.

The length of the song had little or no bearing on the choices made. It was found that with each grade the songs became a little longer. In the second grade the children liked songs eight or sixteen measures in length, but rejected as many eight-measure songs as they chose. The third grade children liked songs twelve or more measures in length and disliked more of the shorter ones. In the upper three grades there were no differences.

Nothing could be learned about the attractiveness of the songs in relation to their vocal ranges. For some time various pitch ranges have been accepted as suitable for the different grade or age levels. As a result, songs have been written in certain keys to conform to these ranges. For performance it is easy to pitch the songs lower or higher to accommodate the singers, and this is frequently done. Therefore a song need not be chosen or rejected because of its pitch range as indicated on the printed page. A new study might well be made of the limits of children's voices and of the ranges in which they prefer to sing.

It is not claimed that the children unerringly and inevitably chose songs of musical worth and rejected those that were commonplace. However, their record was excellent through the fifth grade. There were very noticeable differences between the liked and disliked songs. Only in the sixth grade did the children reject a number of songs that seemed good from every standpoint.

Western Illinois University.

An Acoustical Analysis of Tones Produced by Clarinets Constructed of Various Materials

JAMES M. LANIER

THERE HAS BEEN much discussion as to whether or not the material out of which an instrument is made exerts any influence on its timbre. However, research, experimentation, and publications on this subject are relatively limited. The present analysis was conducted to determine if there are differences in timbre great enough to be seen in the wave form traced on the oscilloscope or registered by the harmonic analyzer.

The analysis was limited to the first eight partials of two tones produced by three ebonite, three metal, and three wood B-flat clarinets. The tones chosen for analysis consisted of the "open G" (*f'*) and "low C" (*b*-flat).

Physically the clarinet is a single reed instrument that employs a bamboo reed of the beating type fastened to the mouthpiece by a ligature; it is constructed of a combined conical and cylindrical tube that is pierced by side holes; and keys, rings, and the finger tips open and close the holes.

Acoustically the clarinet is a combined conical and cylindrical tube, and its tone is generated by a vibrating reed which sets into vibration an enclosed column of air. Moreover, its reed alternately opens and closes the mouthpiece opening while vibrating against the mouthpiece lay.[1] These physical and acoustical properties assist in dictating the partials that the instrument will produce.

Clarinetists are aware of differences in tones produced from an instrument employing different mouthpieces and reeds. Many are aware that the variance in the thickness and evenness of the reed cause alterations in its mode of vibration. This in conjunction with changes in the lay and inside taper of the mouthpiece alters the strength of existing partials and may increase or decrease the total number of partials produced, thus causing the timbre of the tone to change.

The analysis of tones produced by a wind instrument blown by an individual is difficult if not impossible with the harmonic analyzer used by the writer because of the following factors: (1) The short duration of the tone produced, (2) the slight fluctuations in volume of the tone, (3) the possible alteration of pitch caused by the involuntary changing of position and pressure of the lips, and (4) the player's efforts to produce a "good" tone.

The initial procedure in collecting data was to eliminate these variables. This was done by constructing a mechanical embouchure capable of sustaining tones of any given duration. After this was accomplished, the first eight partials of G and C were analyzed to determine their relative strength. Then tone spectra were drawn for each note, depicting graphically the partials and their relative strengths. The wave forms created by these partials on the oscilloscope were

[1] C. S. McGinnis and C. Gallagher, "The Reed's Mode of Vibration," *The Clarinet*, I (Fall 1951), 8.

photographed to provide additional visual information. These photographs were taken with a Zeiss Ikon 35mm. camera on plus "X" film with a shutter speed of 1/50 of a second and a diaphragm opening of f3.5.

In performing these experiments the control of variables was crucial. Intensity, the variable of paramount concern, was controlled by the use of the oscilloscope and the sound-level meter. The oscilloscope contributed to the control of this variable by providing visible wave forms that would increase or decrease in amplitude should any fluctuation in intensity occur in the tone being analyzed. The sound level meter connected with the harmonic analyzer also indicated changes in intensity. The visual representation of acoustical energy received by these instruments served as a basis for the adjustment of air pressure in the mechanical embouchure and the amount of pressure on the reed.

All experiments were conducted in the same room with the equipment placed in a fixed position. The oscilloscope and the sound-level meter microphones were kept at a fixed distance from each clarinet; the clarinet was mounted at a given spot and was blown by the mechanical embouchure; the experimenter sat at a constant distance from the equipment while conducting the experiments; all experiments were performed and checked several times before the final data were recorded; and all wave forms were photographed by the same camera, using a constant shutter speed and diaphragm opening.

In an attempt to eliminate the variables that occur when an instrument is blown by an individual, the writer sought to secure a mechanical device capable of blowing all instruments under the same conditions. With the assistance of Mr. O. E. Campbell, Supervisor of the Physics Shop, New Physics Building, Ohio State University, a mechanical embouchure was constructed from a brass cylindrical tube 1/16 of an inch thick with an outside diameter of 2½ inches and a length of 4½ inches. A plate was constructed so that it could be easily fastened to the front of the tube by screws. In the center of this plate a hole was cut to allow the round corked end of a clarinet mouthpiece to extend far enough to permit the fitting of the barrel joint of the clarinet. The mouthpiece employed in the embouchure was "turned" (cut on the lathe) to allow for the thickness of the brass plate. A clamp was then adjusted around the mouthpiece immediately beyond the ligature to hold the mouthpiece firmly and to serve as a base for the screws used to anchor it to the brass plate. A plate was soldered to the opposite end of the tube to form an airtight chamber.

The desired pressure on the clarinet reed was attained by anchoring a rubber pad to a movable metal rod. The amount of pressure exerted by the pad and the position of the pad on the reed were regulated by a screw type adjustment anchored to the outer wall of the chamber.

Compressed air was passed through a low-pressure pneumatic regulator to supply a controllable air pressure into the chamber. This regulator permitted the regulation of air pressure from 0 to 5 pounds accurately to within .7 of an ounce variance. Additional control was attained by passing the air from the regulator through a large airtight container before passing it into the embouchure.

Tone spectra revealed that the third and fifth partials of metal clarinets tested were not as pronounced as the

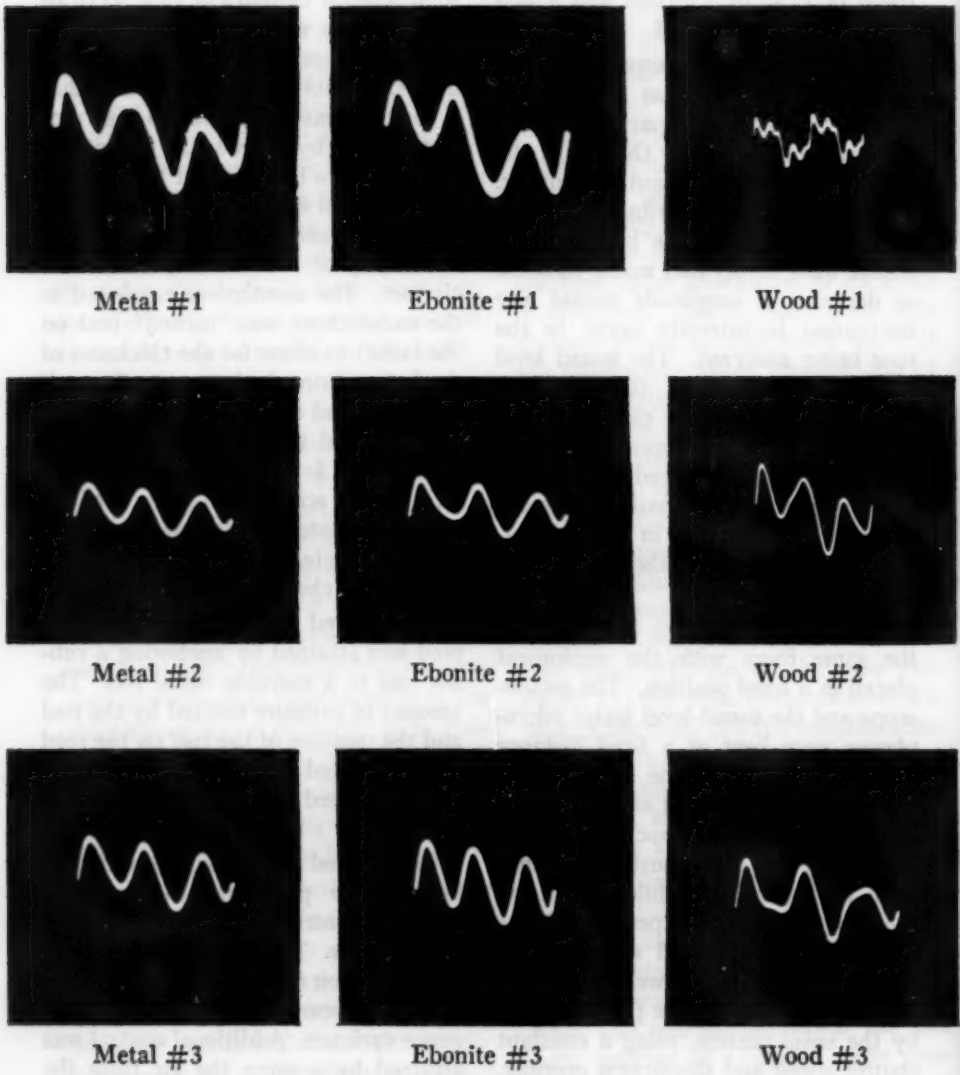
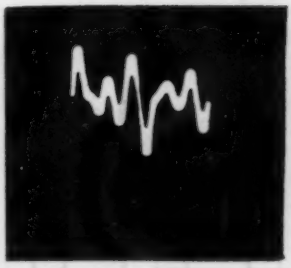
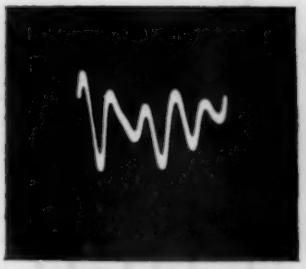


Fig. 1. Oscillograms for open G.



Metal #1



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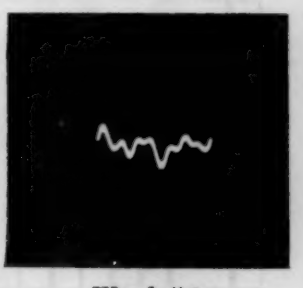
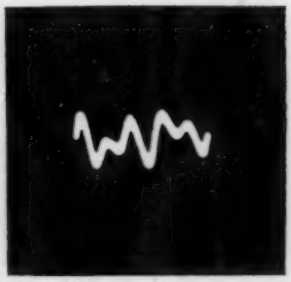
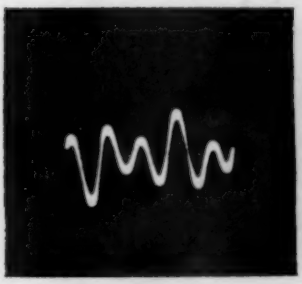


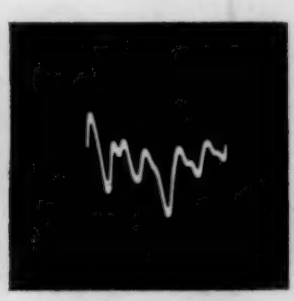
Wood #1



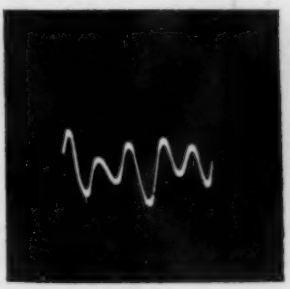
Metal #2



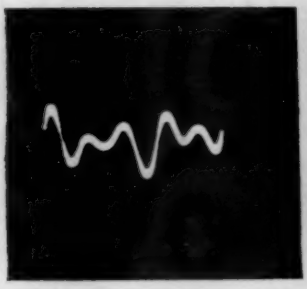
Ebonite #2



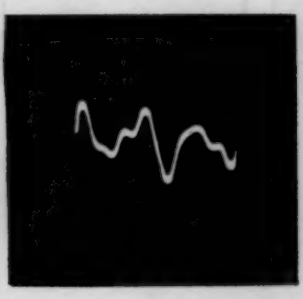
Wood #2



Metal #3



Ebonite #3



Wood #3

Fig. 2. Oscillograms for low C.

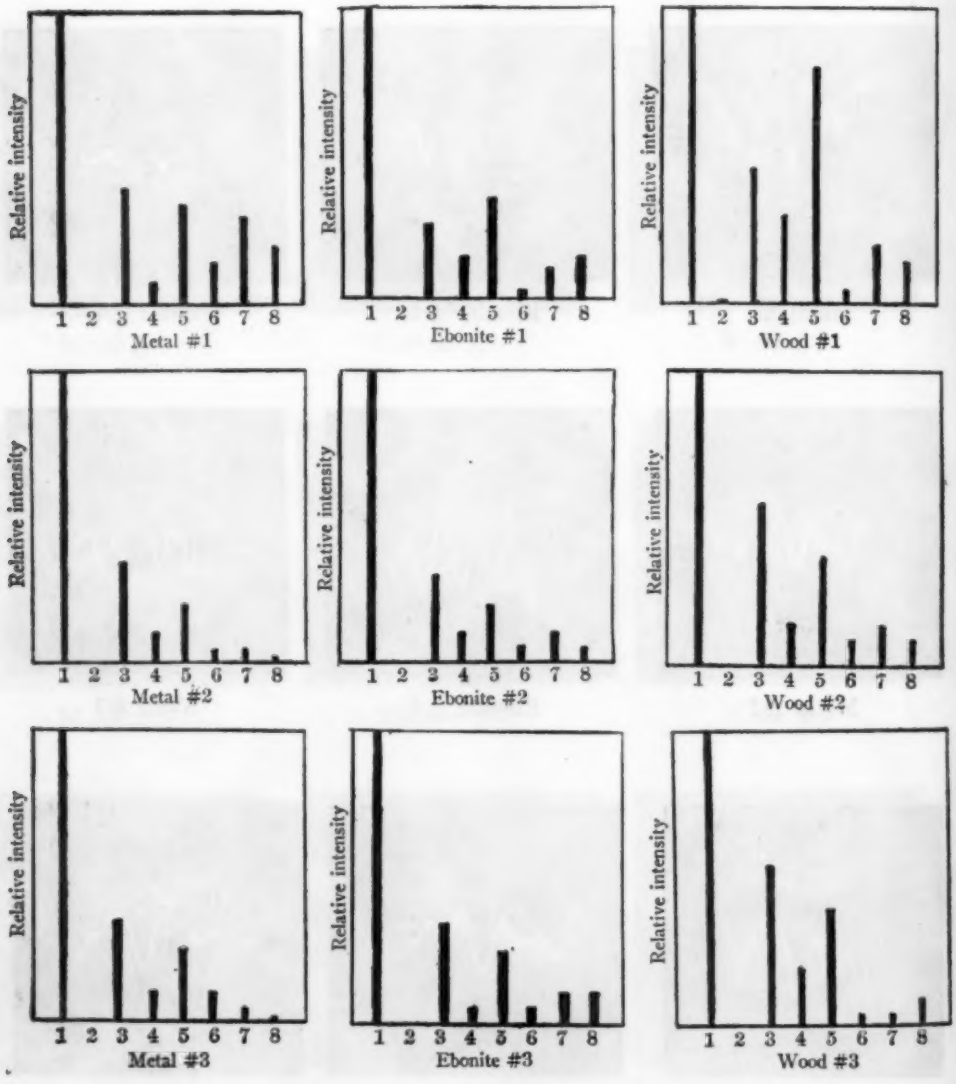


Fig. 3. Tone spectra, open G, showing fundamental and first seven partials.

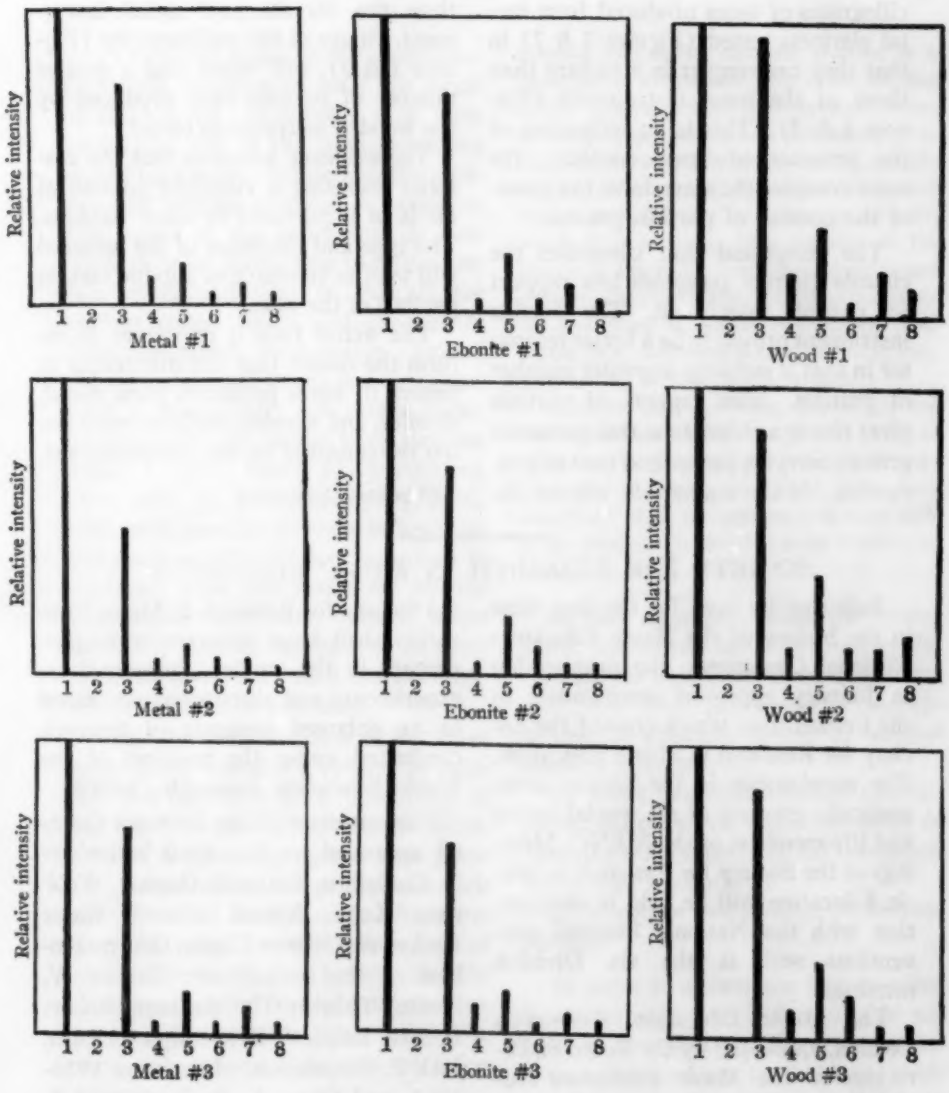


Fig. 4. Tone spectra, low C, showing fundamental and first seven partials.

corresponding partials of the wood instruments tested. Further support of this observation is evident in the oscillograms of tones produced from metal clarinets tested (Figures 1 & 2) in that they are simpler in structure than those of the wood instruments (Figures 1 & 2). This is an indication of the presence of fewer partials; the more complex the wave form the greater the number of partials present.

The compound that comprises the ebonite clarinet possesses less support for partials than wood. The wooden instrument proved to be a better resonator in that it supports a greater number of partials. This support of partials gives rise to a richer tone that possesses greater carrying power and ease of production. If the reader will inspect the tone spectra (Figures 3 & 4), he will note that the wooden clarinets produced stronger third and fifth partials than the ebonite and metal instrument. Study of the oscillographs (Figures 1 & 2), will reveal that a greater number of partials were produced by the wooden instruments tested.

The evidence indicates that the material enclosing a vibrating column of air is of importance to tonal richness. The type and thickness of the material will tend to reinforce or subdue certain partials of the tone.

The writer feels it important to inform the reader that the differences in timbre of tones produced from metal, ebonite, and wooden clarinets were not too recognizable by the unassisted ear.

Ohio State University

SOCIETY FOR RESEARCH IN MUSIC EDUCATION

Balloting by mail for the first time in the history of the Music Educators National Conference, the membership in January approved amendments to the Constitution which created the Society for Research in Music Education. The membership in the Society automatically consists of all special active and life members of the MENC. Meetings of the Society for Research in Music Education will be held in conjunction with the National biennial conventions and at the six Division meetings.

The Music Education Research Council, appointed by the Board of Directors of the Music Educators National Conference, serves as the governing body of the Society for Research in Music Education. The Council initiates and conducts studies and investigations that are approved by the National Board of Directors of the MENC. It is planned that members of the Society for Research in Music Education shall have opportunity to participate in the studies, investigations, experiments and discussions embraced in an enlarged program of research conducted under the auspices of the Music Education Research Council.

New members of the Research Council approved on the 1960 ballot are T. C. Collins, Roderick Gordon, Wolfgang Kuhn, Robert Marvel, Roger Phelps, and Homer Ulrich. Other members of the council are: Robert W. House, Thurber H. Madison, Robert E. Nye, Ralph C. Rea, Ralph E. Rush, Jack R. Stephenson, of the term 1956-1962, and Oleta A. Benn, Samuel S. Fain, Alfred W. Humphreys, George H. Kyme, Jack Pernecky and William N. Reeves of the 1958-1964 term. George Kyme is the new chairman and Jack Pernecky the new secretary of the Council.

An Approach to the Quantitative Study of Dynamics

ERWIN E. GORDON

MUSIC, like many of its companion arts, depends on *color* for much of its beauty. *Dynamics* is a term applied to one of the color-producing elements of music. It refers to the loudness and softness of sound. Composers, well aware of the importance of contrasts in color, have come to utilize certain words and signs to indicate the various sound levels and changes in dynamics which they desire. Among the more common words and signs, one finds *p, piano,* soft; *mp, mezzo piano,* medium soft; *mf, mezzo forte,* medium loud; *f, forte,* loud; *pp, pianissimo,* very soft; *ff, fortissimo,* very loud; *crescendo,* gradual increase in loudness and *descrescendo,* gradual reduction in loudness. One can easily see by the translations that only relative terms are used; that is, no absolute measure of sound level, such as a certain number of decibels, is indicated.

Since the determination of the exact sound level remains a subjective matter, one naturally finds differences in the interpretation of dynamics. However, it is generally agreed that *piano* and *forte* tend to fall at opposite ends of the sound level scale. The term *dynamic range* refers to the range of amplitude from the loudest to the softest sounds in musical performance.

Normann discusses this matter in his article, "Some Principles of Interpretation."

> The importance of dynamic contrast in giving expressive power to music is a problem which some conductors of amateur groups are tempted to underestimate. Harassed by the many difficulties encountered in note reading, finger technique, rhythm and intonation, the question of securing dynamic coloring is a factor easily overlooked. Too often we find in the amateur ensemble a dynamic range hovering somewhere between a *mezzo forte* and a *fortissimo.* A more thoughtful consideration of the musical significance of contrast would give many a performance a finish which it now lacks. The interest of the players in the music would be enhanced and owing to the concentrated attention necessary for nice effects in shading and nuance, there would be a more careful and discerning attitude on the part of the performers.
>
> An axiom used by many conductors and one which contains more than a germ of truth is: "In playing *forte,* you should hear yourself; in *piano,* you must hear your neighbor." Most students seem to have little or no difficulty in securing mere loudness of tone.[1]

In full agreement with this statement, the writer has attempted to determine the answers to three questions:

1. *Are there differences in the approximate dynamic ranges of various musical groups?*
2. *What practical method can the public school music teacher employ in studying the dynamics of his own musical groups and others?*
3. *How can the findings be demonstrated?*

In order to answer the first question it was necessary to find a suitable answer to the second. Thus, the writer found that among the various kinds of apparatus frequently available in public schools, a tape recorder and oscillograph might serve to answer his purpose quite satisfactorily. After ex-

[1] *Music Educators Journal,* XXVI (Dec. 1939), 20.

perimentation and conferences with several electrical engineers to verify the validity of using this technique, the writer visited several schools in the San Francisco Bay area and made tape recordings of various musical performances. These recordings were then taken to the laboratory where they were played in front of the oscillograph. The reactions of the oscillograph were recorded on sheets of paper in terms of what the writer calls "sound level units," (hereafter referred to as "SLU.") Although acoustical differences did not seem to affect the data, an effort was made to control this possible variable by arranging to record eight different bands as they performed in the annual Northern California State Music Festival, May 4, 1951. SLU readings were made of the tape recordings and these serve as the primary raw data for this study.

Dynamic Ranges

Since the writer is concerned with dynamic range in general rather than with fine gradations (which this method admittedly cannot determine), he has made no distinction between *piano* and *pianissimo*, or between *forte* and *fortissimo*. Furthermore, the writer has chosen to present averages (arithmetic means) of softness and loudness, rather than absolute limits or extremes, such as might occur at a single instance in a given performance.

Musical scores were available only for a part of the band performances. When scores were at hand, a more detailed record[2] was possible, lending itself to more extensive interpretation. In such cases it has been possible to check the approximate accuracy of the musical groups in playing the dynamics indicated by the composers. When the musical score was not available, it was impossible to check the approximate accuracy of dynamics. However, a record was made of the SLU changes as they occurred. Thus, the record would indicate certain places where the group was playing louder, and other places where the music was softer.

Let us look, first, at findings with regard to accuracy of interpretation. Figure 1 represents the dynamics activity in a musical performance by Band A. There, we see that in the eighteen

[2]Henceforth, the term *record(s)* will refer to data or information set down on paper, to be distinguished from *recording(s)*, which will refer to musical recordings such as those made on tape and discs.

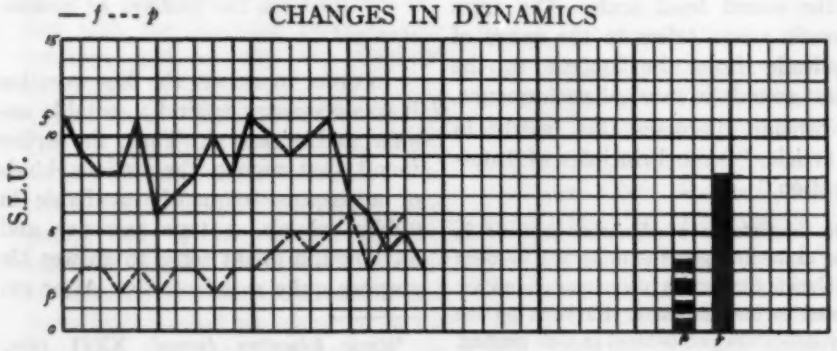


Figure 1. Showing levels of *piano* and *forte* in performance of Band A.

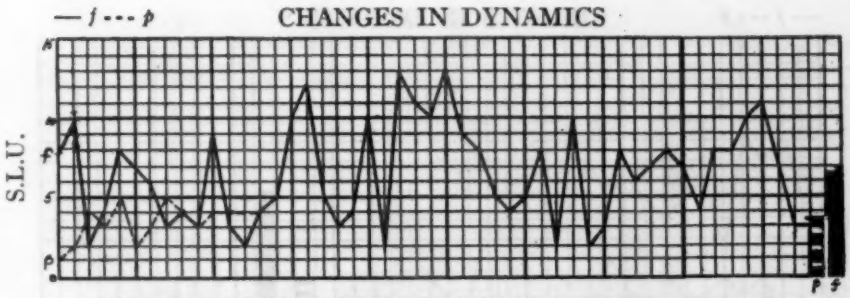


Figure 2. Showing levels of *piano* and *forte* in performance of Band B.

instances where *piano* was indicated the band played from 2 SLU to 6 SLU, with an average of approximately 3.6 SLU. The inconsistency is quite obvious here, but look at the line indicating *forte* passages! Nineteen instances were recorded ranging all the way from 3 SLU to 11 SLU, yielding an average of a little more than 8 SLU. We may state that the approximate dynamic range of Band A is about 4.4 SLU, centered between 3.6 SLU and 8 SLU. It is interesting to note that the writer, when making the tape recording of Band A, wrote in his notes, "Band A has fair dynamics." Furthermore, the adjudicators at the Music Festival rated this band as *good* (third grade on the *superior, excellent, good, fair, poor* scale used at the Festival). However, it must be stated that these ratings are based upon many other criteria besides dynamic range and accuracy.

Figure 2 represents the dynamics activity of Band B. A glance at Figure 2 will show why the writer wrote the comment, "No dynamics," when recording this group. Erratic, inconsistent performance of *forte* passages ranging from 2 SLU to 13 SLU, and similar misperformance of *piano* passages ranging from 1 SLU to 5 SLU are seen. Thus, we have an approximate range of about 3 SLU, centered between 3.5 SLU to 6.5 SLU. The official adjudicators' rating of this band was *Fair*.

Figure 3 represents Band B in the performance of a different composition. The results are a bit more favorable and indicate somewhat more accuracy. Nevertheless, they are far from being what the adjudicators, or the writer,

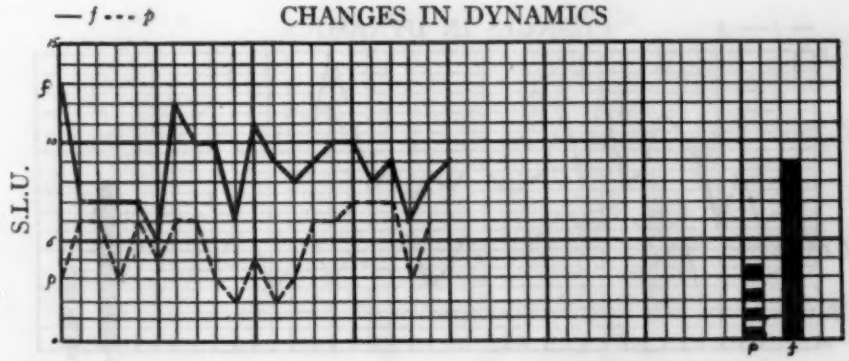


Figure 3. Showing levels of *piano* and *forte* in second performance of Band B.

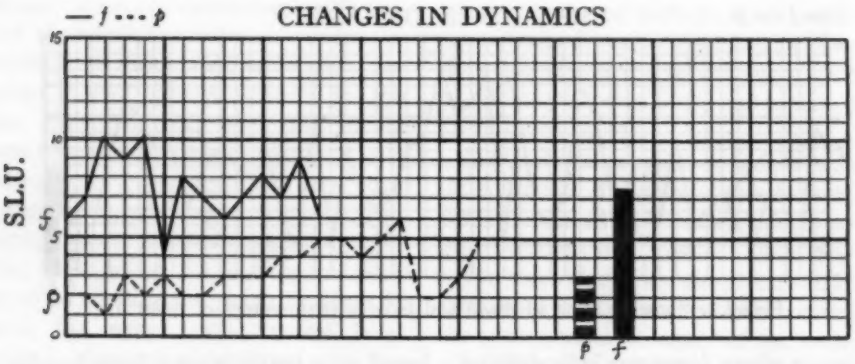


Figure 4. Showing levels of *piano* and *forte* in performance of Band C.

would probably call good performance. Band B's approximate dynamic range in this composition was about 4 SLU, centered somewhere between 4.7 and 8.7.

Band C received an *excellent* rating at the festival. The writer's comment at time of the performance was, "Dynamics, O.K."

Figure 4 indicates that the *forte* passages were almost consistently louder than the soft passages. This study would rate their approximate dynamic range as about 4.5 SLU, centered between 4.1 SLU and 8.6 SLU. Although, the dynamic range is somewhat small, it should be mentioned that the composition itself (*Blue Danube Waltz*) called for less dynamic contrast than the heavier compositions played by the other bands (see Table 1).

The official adjudicators' rating of Band D was *excellent*, and the writer's comment, "Good dynamics." This study would rate the approximate dynamic range at about 4.5 SLU, centered somewhere between 3.0 SLU and 7.5 SLU (Figure 5). It is interesting to note that though the coloring of the music was pleasing to the writer's ears, the accuracy of playing dynamics left something to be desired.

First place and top rating of *superior* went to Band E. The writer's comments were, "Clear-cut distinction" and "Wonderful dynamics." Figure 6 shows

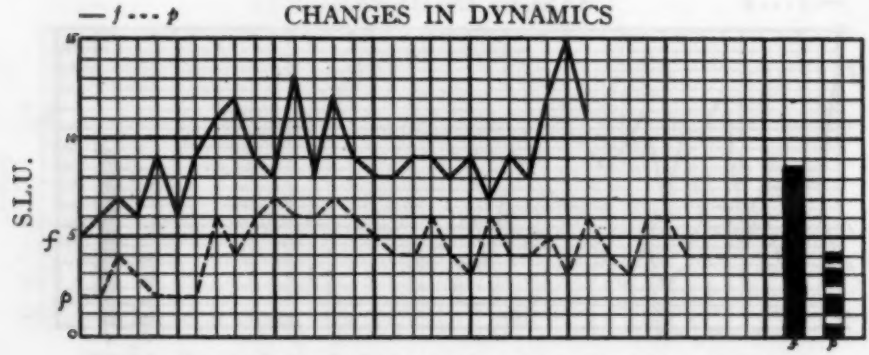


Figure 5. Showing levels of *piano* and *forte* in performance of Band D.

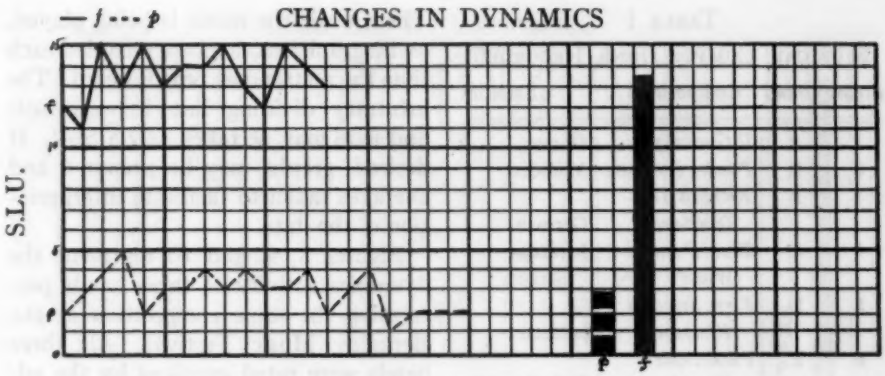


Figure 6. Showing levels of *piano* and *forte* in performance of Band E.

the approximate dynamic range to be about 10.3 SLU, with an average "soft" about 2.9 SLU and an average "loud" about 13.5 SLU. The conductor of this band, when interviewed by the writer, stated, "One of the first things I insist upon is expression. . . . That means real dynamic contrast and strict adherence to the markings."

Figure 7, representing the dynamics activity of Band F, has been included in this study only as evidence substantiating the writer's belief that accurate performance of dynamics, with a reasonable degree of contrast, may be achieved by public school music groups. Band F, unlike all others (high school bands) mentioned in this study, is an elementary school ensemble, composed of fifth and sixth graders. Like the conductor of Band E, the conductor of Band F, insists upon dynamic contrast and strict adherence to dynamic markings.

All the above instances demonstrate an audio-visual approach to the study of dynamics where musical scores are available. The following three instances are included to suggest a technique which might be employed when scores are not available. Such a classroom situation might occur when students are listening to recordings made by the teacher while visiting other schools or

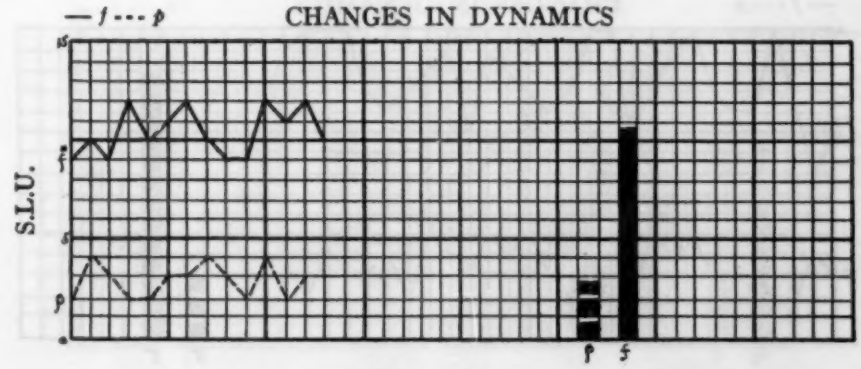


Figure 7. Showing levels of *piano* and *forte* in performance of Band F.

TABLE 1

MUSICAL COMPOSITIONS RECORDED

Figure	*Band*	*Composition*	*Composer*
1	A	*Il Guarany*	Gomez
2	B	*Phedre Overture*	Massenet
3	B	*Richard III Overture*	German
4	C	*Blue Danube Waltz*	Leidzen-Strauss
5	D	*First Swedish Rhapsody*	Leidzen
6	E	*Pathetique Symphony*	Tschaikowsky
7	F	*Integer Vitae*	Fleming
8	G	*Universal Judgement*	De Nardis
9	H	*Universal Judgement*	De Nardis
10	I	*Universal Judgement*	De Nardis

attending other festivals. Without musical scores, accuracy in playing dynamics cannot be determined; *tendencies*, only, concerning range and contrasts should be deduced. The method used in such cases is simpler than the one used above. The recorder and oscillograph set-up is the same. A metronome, set at 60 beats per minute (or any other time interval desired), is started slightly before the music begins. Then, while the music is being played, oscillograph reactions are recorded each time the metronome beat is heard. The arbitrary dividing line between soft and loud may be taken as 7.5 SLU. If desired, graphs may be prepared and averages taken to facilitate interpretation of the data.

Figures 8, 9, and 10 represent the dynamics activity of three bands performing the same composition at the Berkeley Music Festival. All three bands were rated *excellent* by the adjudicators, who commented as follows: Band G, "Good dynamics, besides good range"; Band H, "Well played, good dynamics, pleasure to hear"; Band I, "Dull performance, not much dynamics." The bands might be rated in approximate dynamic range tendencies as follows: Band G—soft, 2.7 SLU, loud, 12.7 SLU; Band H—soft, 2.5 SLU, loud, 13.6 SLU; Band I—soft, 4.5 SLU, loud, 10.2 SLU.

Technical Data

Apparatus. The apparatus used in securing data for this study included one tape recorder (Brush Development Company, Sound-Mirror Model BK-401); one microphone (Acoustical Crystal Microphone Model BA-106);

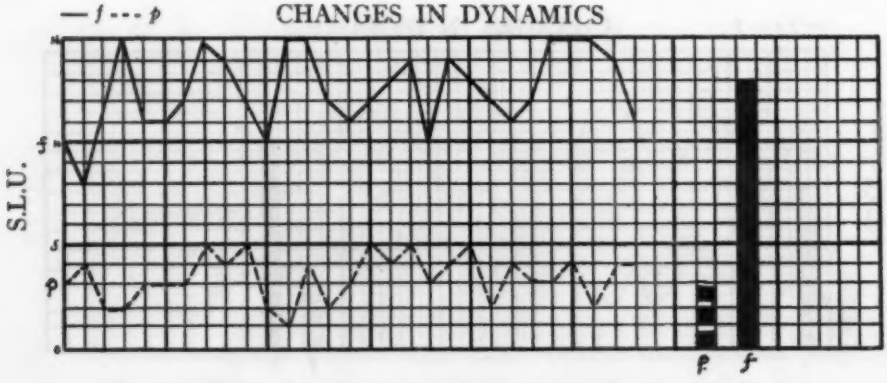


Figure 8. Showing levels of *piano* and *forte* in performance of Band G.

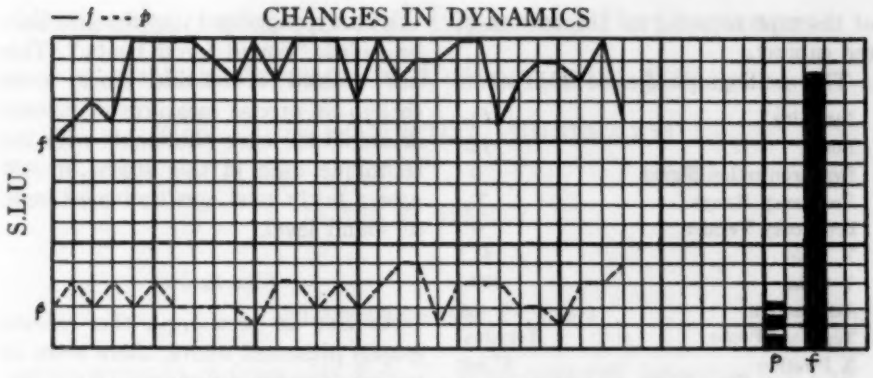


Figure 9. Showing levels of *piano* and *forte* in performance of Band H.

one Cathode-Ray Oscillograph (Allen B. Dumont Laboratories, Inc., Type 224, 3" Scope).

Recording technique. All recordings were made on the tape recorder mentioned above, which was set up in the balcony of the Berkeley High School auditorium. The microphone was laid on the carpeted stairway to minimize possible echoing and/or reverberation. The "record volume" was held at a constant position found to be proper for recording in the auditorium, by means of the tape recorder's electric-eye. The writer, who did the recording, arbitrarily divided the full sweep of the volume control into ten sections and numbered them consecutively; these recordings were made with the volume control set at a constant level. Standard Minnesota Mining and Manufacturing Company recording tape was used.

Laboratory technique. The tape recorder and oscillograph were placed side by side on a work bench, the tape recorder on the writer's left and the oscillograph on the right. A space of 10" to 15" was left between the two pieces of apparatus. The microphone was connected to the front of the oscillograph at the Y Sig., Input and Gnd. terminals and placed in the rear section

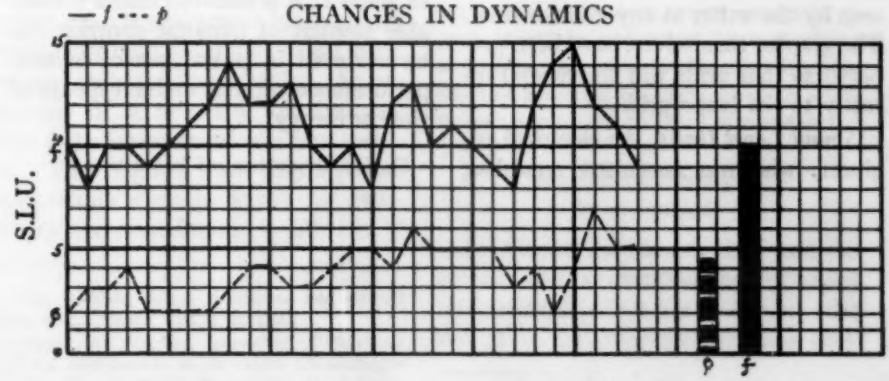


Figure 10. Showing levels of *piano* and *forte* in performance of Band I.

of the tape recorder on the bottom of the cabinet.

The oscillograph dial settings were:

Intensity	62
Focus	78.5
Synchronization Signal	0
Frequency Range	X
Frequency Vernier	0
X Gain	41.5
Y Gain	100
Attenuation	1.1
Terminal Probe	Terminal
X Position	5° left
Y Position	2° left

The tape recordings were played and the scope pip was observed and reaction recorded on paper in the following manner. A musician-assistant followed the music with a musical score and related the dynamic markings (as indicated in the score) to the writer who wrote all the *p* and *pp* reactions in one column, and all the *f* and *ff* reactions in another column. These reactions were recorded in terms of the number of grid-lines covered by the pip's Y position, the maximum being 15 grid-lines above X position, and the minimum being 0, or X position, itself. The solid and broken bars used to indicate approximate SLU averages in Figures I through X can give the reader an almost exact picture of the scope pip as seen by the writer at any given instant. The graphs, themselves, have been prepared so that grids will correspond directly to the scope grids.

Sound Level Units. An electrical engineer, who was consulted regarding this study, suggested that the grid lines be called, "Sound Level Units." This has seemed reasonable since, even though no precise measures of volume or amplitude were obtainable with the technique used in this study, it still gave a fairly good, qualitative estimate of sound level.

Conclusions

As can be seen from the various graphs presented above, there seem to be considerable differences in the dynamic ranges of the various musical groups recorded. Using two extreme cases as illustration, we see that Band B performed with an approximate dynamic range of only 1 SLU, whereas Band E utilized an approximate dynamic range of about 10 SLU.

The official festival ratings were not presented as absolute verification of the findings; rather, they were intended, along with the recorder's comments, merely to indicate the possible validity of the approach to the study of dynamics in music suggested in this paper. The writer agrees that beauty in music comes from many things, among which proper performance of dynamics is only one element. However, as suggested by the performance of Band F, it is believed that a reasonable amount of dynamic contrast can be achieved in public school musical performance without undue expense of time or energy.

Hawaii Department of Instruction

Comparison of Solo and Ensemble Performances with Reference to Pythagorean, Just, and Equi-Tempered Intonations

JAMES A. MASON

I. Introduction and Problem

MANY METHODS of intervallic division of the octave for purposes of melodic and harmonic treatments have been developed. From these methods have come three theoretical and practical standards of intonation for use in contemporary Western music, (1) Pythagorean, (2) just, and (3) equi-tempered.

Pythagorean intonation.—This system of intonation derives all notes from the interval of the perfect fifth. For example, the major third is the fourth fifth above a predetermined tone reduced to the proper octave.[1]

Just intonation.—This system of tuning in effect undertakes to make use of all perfect intervals of the harmonic series. It is a system of tuning based on true ratios of intervals, as opposed to equi-tempered tunings. Unlike the Pythagorean temperament, intervals are derived not only from the perfect fifth, but also from the "pure" third. An occurrence of a new key requires the notes to be transformed to a new tonality. "This requires some fifty separate tones within a single octave for satisfactory accommodations to all keys."[2]

Equi-tempered intonation. — The equi-tempered scale is a division of the octave interval into twelve equal semitones. In justification of the resulting distortion of every interval except that of the octave, the following arguments have been advanced:

(1) Any group of human beings using imperfect means (instruments) for tone production must have a common point of understanding in the realm of scale pitches, so that artistic unity may be better achieved in an environment of complex key relationships and modulations.

(2) The very act of building, tuning, and playing a musical instrument requires that there be one fixed pitch for every chromatic tone to avoid impossible complexities.

(3) In order to bring together in ensemble the various unavoidable and at times opposing differences of the interval tuning of various instruments, a single common standard of pitch should be understood by each player so that he may more intelligently direct his effort of humoring the pitch, especially when the ear is confused by other circumstances.[3]

Review of Pertinent Investigations

In spite of the reasons cited and the extant cultural conditioning for equal temperament, there are musicians who feel it to be objectionable, and they

[1]John Redfield, *Music a Science and an Art* (New York: Tudor, 1937), p. 184.

[2]Donald W. Stauffer, *Intonation Deficiencies of Wind Instruments in Ensemble* (Washington D. C.: The Catholic University of America Press, 1954), p. 10.

[3]Stauffer, pp. 19-20.

prefer using an unequal temperament in their playing.[4]

Revesz has reported that players of certain instruments, primarily those of the string choir and the human voice, use untempered intonation when they are not confined to performing with keyboard instruments.[5]

The performance of six professional violinists was investigated by Green. Striking deviations from tempered intervals were found, as well as considerable agreement with the intervals of the Pythagorean scale in unaccompanied performance.[6]

Nickerson conducted an experiment using twenty-four well-trained string quartet players. He analyzed their solo and ensemble performances, as related to the three systems of intonation described above, and found the Pythagorean system in use typically for unaccompanied melodies and ensemble playing.[7]

Helmholtz, in conducting studies with choirs in England, found that those trained in solfeggio sang "pure" intervals (just intonation) when they were unaccompanied.[8] Williamson, on the other hand, expressed the idea that, while just intonation appeals to physicists because of its relationship to the harmonic series, few musicians have ever heard it and even fewer have ever practiced it.[9]

Furthermore, Barbour points out that brass instruments make use of extended portions of the harmonic series. Therefore, performers have a natural inclination to use just intonation in certain keys.[10]

In reviewing the contemporary literature on tonality, Nickerson found most of the information highly speculative. The few pertinent experiments reported had not employed satisfactory analytical methods.[11] Therefore, further experimentation is needed to determine the extent to which Pythagorean, just, and equi-tempered systems are used in musical instruments' intonation anomalies.

Statement of Problem

The purpose of this study was to determine: (1) if there is any consistent pattern of differences between the intonation of unaccompanied solo wind instrument performances and wind ensemble performances; (2) if unaccompanied solo performances tend to produce Pythagorean, just, or equi-tempered intonation; (3) if ensemble performances tend to produce Pythagorean, just, or equi-tempered intonation.

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[4]Stauffer, p. 7.

[5]Geza Revesz, *The Psychology of Music*, trans. G. De Courcy (Norman: University of Oklahoma Press, 1954), pp. 30-31.

[6]Paul C. Green, "Violin Intonation," *Journal of the Acoustical Society of America*, IX (1937), 43-44.

[7]James F. Nickerson, "Intonation of Solo and Ensemble Performance," *Journal of the Acoustical Society of America*, XXI (1949), 593.

[8]Herman L. Helmholtz, *Sensations of Tone*, trans. A. J. Ellis (London: Longman, Green and Co., 1912), p. 427.

[9]Charles Williamson, "Intonation in Musical Performance," *American Journal of Physics*, X (August, 942), 172.

[10]J. Murray Barbour, *Tuning and Temperament* (East Lansing: Michigan State College Press, 1951), p. 200.

[11]James F. Nickerson, "A Comparison of Performances of the Same Melody Played in Solo and in Ensemble with Reference to Equi-Tempered, Just, and Pythagorean Intonations" (unpublished Ph.D. dissertation, University of Minnesota, 1948), p. 49.

II. Experimental Design

An experiment was designed to seek further data concerning the nature of intonations used by performers on the instruments of the woodwind quintet. The investigation involved the members of two woodwind quintets. Recordings of their unaccompanied solo and ensemble performances were made.

Description of Subjects

Members of the woodwind quintets served as subjects. Each quintet was comprised of a flute, oboe, clarinet, horn, and bassoon. Both ensembles were associated with a university music department, one a faculty quintet and the other a student quintet. The faculty group consisted of well-trained performers, most of whom had had both professional and teaching experience on their respective instruments. The student group was comprised of schooled and experienced performers. However, the professional experience of the student group was limited.

Selection of Music

The music employed in this study was Ravel's "Pavane pour une infante défunte" transcribed for woodwind quintet by Lawrence Intravaia. This composition was selected because: (1) it presented a typical playing situation; (2) it offered a satisfactory musical experience; (3) seven significant diatonic pitches were presented in the melodic solo for each instrument; (4) the music was written in a harmonic rather than a polyphonic style; (5) it had a slow tempo (quarter note = 66); (6) modulation was kept at a minimum.[12]

[12]Authorities maintain that a new tonality changes the dimension of the notes in unequal temperament. Stauffer, p. 10.

Apparatus

Apparatus utilized in this experiment included (1) a chromatic stroboscope (Stroboconn), an electronic device for rapid and accurate visual measurements of sound frequencies to within one hundredth part of one equi-tempered semitone; (2) a Strobotuner, a simple stroboscope for analyzing visually one tone at a time (calibrated to A-440 and used in this experiment for tuning the woodwind quintet instruments); (3) two Ampex tape recorders (Models 600 and 600Y), an Ampex amplifier and speaker (Model A692) and an Altec (No. 21 "Lip-stick") microphone for recording master tapes and for editing and preparing tape loops.

Other miscellaneous equipment included a metronome to establish tempo, a thermometer to check recording room temperature, an A-440 tape loop[13] for periodically checking accuracy of analyzing apparatus, and tape splicing supplies.

Procedures

Subjects were prepared for the experiment by playing a series of warm-up experiences and individually practicing the experimental music. Care was taken to tune each instrument (A-440) as determined by the Strobotuner. The performers were instructed to play as accurately and musically as possible. Tempo was established by a metronome prior to each recording.

Lighting, ventilation, temperature, and room acoustics were satisfactory. A standard woodwind quintet seating arrangement was used.

[13]The A-440 tape loop was prepared from the U. S. Bureau of Standards signal.

Individual recordings of unaccompanied solo performances were made previous to recordings of the complete ensembles. Each quintet rehearsed the music in ensemble and performed it five times. During each of the five ensemble performances the microphone was placed immediately adjacent to a different instrument so that each instrument could be easily distinguished from the rest when stroboscopic analyses were made.

Significant pitches were selected representing intervals of the G major scale. The same pitches were used for both solo and ensemble analyses. These pitches were taken from melodic sections of the composition.

Tape loops were prepared from master tapes. These loops represented sections of solo and ensemble performances chosen for analyses. Each loop was played until all selected pitches were analyzed in plus or minus cents.[14]

TABLE 1

QUINTET X: INTERVALLIC COMPARISONS OF SOLO AND ENSEMBLE PERFORMANCES

Instrument		*Root*	*Maj. 2nd*	*Maj. 3rd*	*Per. 4th*	*Aug. 4th*	*Per. 5th*	*Maj. 6th*	*Maj. 7th*
Frequency cents from the tonic		0	200	400	500	600	700	900	1100
Flute	S	—2	175	378		575	679	901	1096
	E	10	202	404		605	707	920	1108
Oboe	S	10	214	425	512		710	912	1115
	E	6	202	399	506		705	904	1102
Clarinet	S	5	207	403	500		702	900	1100
	E	9	207	405	502		705	903	1101
Horn	S	0	196	396	500		700	900	1100
	E	9	192	405	501		706	900	1094
Bassoon	S	15	202	418		601	711	900	1107
	E	9	195	399		591	705	895	1107

III. RESULTS AND INTERPRETATIONS

The data concerning the obtained frequencies of the experimental pitches for both solo and ensemble performances are presented in the tables and are expressed in cents, as follows: (1) solo versus ensemble pitch levels, Tables 1 and 2; (2) solo versus Pythagorean, just, and equi-tempered pitch levels, Table 3; and (3) ensemble versus Pythagorean, just, and equi-tempered pitch levels, Table 4.

The two quintets are referred to as

[14] A cent is the interval between two tones having as a basic frequency ratio the twelve-hundredth root of two. (One one-hundredth of an equi-tempered semitone.)

TABLE 2
QUINTET Y: INTERVALLIC COMPARISONS OF SOLO AND ENSEMBLE PERFORMANCES

Instrument		*Root*	*Maj. 2nd*	*Maj. 3rd*	*Per. 4th*	*Aug. 4th*	*Per. 5th*	*Maj. 6th*	*Maj. 7th*
Frequency cents from the tonic		0	200	400	500	600	700	900	1100
Flute	S	15	204	417		620	719	918	1120
	E	16	212	416		618	713	917	1120
Oboe	S	5	205	410	505		707	913	1118
	E	8	203	408	501		708	911	1106
Clarinet	S	12	203	397	495		699	899	1103
	E	12	206	415	511		705	905	1104
Horn	S	0	202	400	500		712	903	1101
	E	15	206	410	507		715	910	1104
Bassoon	S	25	222	418		615	719	905	1112
	E	42	224	426		617	729	910	1118

X and *Y;* quintet *X* representing the faculty ensemble and quintet *Y* the student ensemble. In Table 1 and 2, *S* and *E* are used to represent solo and ensemble performances respectively.

Solo Versus Ensemble Performances

Tables 1 and 2 present the frequency data obtained from stroboscopic analyses of certain pitches as produced in both the solo and ensemble performances of quintets *X* and *Y*.

In spite of the ample warm-up periods allowed and the care taken by the performers in tuning to A-440, there was a general tendency on the part of all performers to play sharper than the established pitch. Particularly noticeable deviations were evidenced in the solo performances of flute *X*, and horns *X* and *Y*. As a general rule, contemporary wind instrumentalists use instruments constructed to conform with the international standard tuning frequency. However, these instrumentalists often tune to an *A* of significantly higher frequency to attain brilliancy. A few performers have been known to have had their instruments built to a higher frequency than A-440.[15] Such practices have possibly conditioned woodwind quintet instrumentalists to a higher pitch standard.

Data in Tables 1 and 2 reveal that there are few if any consistent patterns of differences between unaccompanied solo and ensemble performances. However, the finding that differences do exist, even if random in nature, contradicts what Nickerson found with re-

[15]Robert W. Young, "Why an International Standard Tuning Frequency?" *Journal of the Acoustical Society of America;* XXVII (1955), 380.

TABLE 3

SOLO VERSUS PYTHAGOREAN, JUST, AND EQUI-TEMPERED INTONATIONS

Intervals	*Instruments*	*Pythagorean*		*Just*		*Equi-Tempered*	
		X	*Y*	*X*	*Y*	*X*	*Y*
Root	Fl.	−2	15	−2	15	−2	15
	Ob.	10	5	10	5	10	5
	Cl.	5	12	5	12	5	12
	Hn.	0	0	0	0	0	0
	Bsn.	15	25	15	25	15	25
Maj. 2nd	Fl.	−29	0	−29	0	−25	4
	Ob.	10	1	10	1	14	5
	Cl.	3	−1	3	−1	7	3
	Hn.	−8	−2	−8	−2	−4	2
	Bsn.	−2	18	−2	18	2	22
Maj. 3rd	Fl.	−30	9	−8	31	−22	17
	Ob.	17	2	39	24	25	10
	Cl.	−5	−11	17	11	3	−3
	Hn.	−12	−8	10	14	−4	0
	Bsn.	10	10	32	32	18	18
Per. 4th	Ob.	14	7	14	7	12	5
	Cl.	2	−3	2	−3	0	−5
	Hn.	2	2	2	2	0	0
Aug. 4th	Fl.	−37	8	−15	30	−25	20
	Bsn.	−11	3	11	25	1	15
Per. 5th	Fl.	−23	−17	−23	−17	−21	19
	Ob.	8	5	8	5	10	7
	Cl.	0	−3	0	−3	2	−1
	Hn.	−2	10	−2	10	0	12
	Bsn.	9	17	9	17	11	19
Maj. 6th	Fl.	−5	12	17	34	1	18
	Ob.	6	7	28	29	12	13
	Cl.	−6	−7	16	15	0	−1
	Hn.	−6	−3	16	19	0	3
	Bsn.	−6	−1	16	21	0	5
Maj. 7th	Fl.	−14	10	8	32	−4	20
	Ob.	5	8	27	30	15	18
	Cl.	−10	−7	12	15	0	3
	Hn.	−10	−9	12	13	0	1
	Bsn.	−3	2	19	24	7	12

TABLE 4

ENSEMBLE VERSUS PYTHAGOREAN, JUST, AND EQUI-TEMPERED INTONATIONS

Intervals	*Instruments*	*Pythagorean*		*Just*		*Equi-Tempered*	
		X	*Y*	*X*	*Y*	*X*	*Y*
Root	Fl.	10	16	10	16	10	16
	Ob.	6	8	6	8	6	8
	Cl.	9	12	9	12	9	12
	Hn.	9	15	9	15	9	15
	Bsn.	9	42	9	42	9	42
Maj. 2nd	Fl.	−2	8	−2	8	2	12
	Ob.	−2	−1	−2	−1	2	3
	Cl.	3	2	3	2	7	6
	Hn.	−12	2	−12	2	−8	6
	Bsn.	−9	20	−9	20	−5	24
Maj. 3rd	Fl.	−4	8	18	30	4	16
	Ob.	−9	0	13	22	−1	8
	Cl.	−3	7	19	29	5	15
	Hn.	−3	2	19	24	5	10
	Bsn.	−9	18	13	40	−1	26
Per. 4th	Ob.	8	3	8	3	6	1
	Cl.	4	13	4	13	2	11
	Hn.	3	9	3	9	1	7
Aug. 4th	Fl.	−7	6	15	28	5	18
	Bsn.	−21	5	1	27	−9	17
Per. 5th	Fl.	5	11	5	11	7	13
	Ob.	3	6	3	6	5	8
	Cl.	3	3	3	3	5	5
	Hn.	4	13	4	13	6	15
	Bsn.	3	27	3	27	5	29
Maj. 6th	Fl.	14	11	36	33	20	17
	Ob.	−2	5	20	27	4	11
	Cl.	−3	−1	19	21	3	5
	Hn.	−6	4	16	26	0	10
	Bsn.	−11	4	11	26	−5	10
Maj. 7th	Fl.	−2	10	20	32	8	20
	Ob.	−8	−4	14	18	2	6
	Cl.	−9	−6	13	16	1	4
	Hn.	−16	−6	6	16	−6	4
	Bsn.	−3	8	19	30	7	18

gard to string quartets. While results of the string quartet study evince no significant intonational changes to conform to harmonic demands,[16] this study seems to indicate that woodwind quintet performances are significantly affected by the harmonic structure of music.

Solo Versus Pythagorean, Just, and Equi-Tempered Intonations

Table 3 presents the frequency deviations of solo performances from Pythagorean, just, and equi-tempered intonations. The comparative data were obtained from stroboscopic analyses of the intervals. These intervals are identified in the column on the left side of the table. To the right of the interval column appear the instruments and their corresponding deviations from Pythagorean, just, and equi-tempered intonations. These comparative deviations are presented in plus and minus cents.

Data in Table 3 reveal a significant lack of conformity in woodwind solo performances either to Pythagroean, just, or equi-tempered intonations. Quintet X deviated least from equi-tempered intonation, while quintet Y deviated least from Pythagorean intonation. In the solo performances, the greatest departure occurred from the just system of intonation.

Ensemble Performances Versus Pythagorean, Just and Equi-Tempered Intonations

Table 4 presents the frequency deviations of ensemble performances from Pythagorean, just, and equi-tempered intonations.

Data in Table 4, like those in Table 3, reveal a significant lack of conformity in woodwind ensemble performances either to Pythagorean, just, or equi-tempered intonations.

An average of the deviations from all systems of intonation in ensemble performances compares favorably with the findings for solo performances. Quintet *X* deviated least from equi-tempered intonation, while quintet *Y* deviated least from Pythagorean intonation. In the ensemble performances, the greatest departure occurred from the just system of intonation.

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[16]Nickerson, "Intonation of Solo and Ensemble Performance," p. 594.

The Mendelssohn Quintet Club: A Milestone in American Music Education

ROGER P. PHELPS

MOST AMERICANS are familiar with the remarkable work of Theodore Thomas and others who worked untiringly and unselfishly to propagate the best in symphonic music to the four corners of this vast country. But how about chamber music? The exploits of an unusual ensemble, the Mendelssohn Quintet Club, have been overlooked by most music historians. This professional group earned a distinction which has been achieved by few ensembles either before or since—namely, performing music for discriminating audiences for almost half a century, from 1849 to 1898.

It was the first professional group organized in this country which devoted itself *exclusively* to the performance of chamber music. Although the annals of American musical history record the existence of several chamber music ensembles prior to its organization, the members of these groups performed diverse duties, musical and otherwise. As an evidence of the ardent devotion and zeal of the Mendelssohn Quintet Club to the task of bringing good music, not only to this country, but also to the world, one should note that the tours of the group during its forty-nine years of existence carried it to all parts of the United States and even to such far away places as Hawaii, Australia, and New Zealand.

The Mendelssohn Quintet Club seems to have been the first professional ensemble which established a conservatory of music. Five years after Eben Tourjee (1834-1891) established the New England Conservatory of Music, Thomas Ryan (1827-1903), the leader of the group, became Director of the National College of Music. Founded in 1872, and staffed by members of the Mendelssohn Quintet Club, the enrollment exceeded two hundred students before the project was abandoned one year later. The group, of course, still continued to perform during the time the National College of Music was in existence, but on a more limited scale. The great Boston fire of 1873 indirectly caused the school to close its doors, and individual members continued their private teaching elsewhere.[1]

The Mendelssohn Quintet Club was sympathetic toward the American composer, and many premiere performances of chamber music by Americans were presented by the ensemble.

It may be said that the Mendelssohn Quintet Club had a marginal connection with the Harvard Musical Association, which was organized in 1837 out of the "Pierian Sodality" by a group of Harvard graduates. Members of the Association presented a concert of chamber music, the first of a series of eight programs, in Jonas Chickering's piano rooms in Boston the evening of November 13, 1844 which included the

[1]Thomas Ryan, *Recollections of an Old Musician* (New York: E. P. Dutton Co., 1899), pp. 172-173.

"Trio of Beethoven in C Minor" and *Quartet in D Minor,* by W. A. Mozart, in addition to some instrumental solos.[2] John Bigelow, a music-loving amateur, who had "quartet parties" in his home every Saturday evening, was very outspoken in his support of the series of chamber music concerts given by the Harvard Musical Society. At one of the Saturday sessions, while commenting upon the excellence of the society's programs, Bigelow advocated the establishment of a professional ensemble to play chamber music. Thomas Ryan, who was a faithful member of Bigelow's circle of musicians, then undertook the task of assembling a group of professional musicians, who, on December 4, 1849, under the name Mendelssohn Quintet Club, presented the first concert of chamber music by a professional organization in America. The program was given in the Chickering piano rooms, as follows:

1. *Quintette in A, Opus* 18 Four movements — Mendelssohn
2. *La Melancholie,* solo for violin. Mr. Francis Riha — Prume
3. *Trio for Flute, Violin, and Violoncello,* on themes from the opera of "Zampa," by Herold — Kalliwoda
4. *Fifth Air Varie,* for Clarinet — F. Berr
5. *Quintette in E-flat,* Opus 4 Four movements[3] — Beethoven

It is interesting to note that the eventual name for the group was decided upon as a result of rehearsing the opening quintet. The highly esteemed Felix Mendelssohn had died two years previously. The name Prume, although obscure today, was François Prume, uncle of the renowned violin prodigy, François Jehin [Jehin-Prume] (1839-1899). Kalliwoda, of course, was the prolific nineteenth century Bohemian composer Johann Wenzel Kalliwoda (1801-1866). Friedrich Berr (1794-1838), a celebrated clarinetist and bassoonist, is known essentially for his compositions for woodwind instruments.

The original members of the Mendelssohn Quintet Club were August Fries, first violin; Francis Riha, second violin; Thomas Ryan, viola and clarinet; Edward Lehmann, viola and flute; Wulf Fries, violoncello.[4]

August Fries, who went to Norway in 1859, was succeeded by William Schultze, one-time concertmaster of the Germania Orchestra, which came to the United States in 1848. Schultze left the organization in 1876, and was replaced by S. E. Jacobsohn. Jacobsohn, who played only two seasons with the group, was followed in quick succession by Bernard Listemann (1878), Edward Heimendahl (1879), and Isador Schnitzler (1881), a young Dutchman.

Francis Riha, who came to America in 1846 with the Steyermark Orchestra, remained with the Club until 1854, and his successor, Carl Meisel, stayed until 1872. Following Meisel were Carl Hamm, Charles W. Allen (1876), Gustav Dannreuther (1877), and August Thiele (1881).

Thomas Ryan (1827-1903), clarinetist, flutist, and violist, came to the United States from Ireland in 1844, and was the only original member who was still with the group when it disbanded in 1898. Ryan was the manager and real driving force behind the ensemble.

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[2]John Sullivan Dwight, *The Harvard Musical Association* (Boston: George H. Ellis Co., 1912), p. 16.

[3]Ryan, p. 92.

[4]*Loc. cit.*

Returning to Denmark after he left the organization in 1853, Edward Lehmann was succeeded by Gustave Krebs. Krebs, in turn, was followed by Frederick Zacheler (1860), Robert Goering (1864), Edward Berger (1865), William Wiesel (1866), and Edward M. Heindl (1867). After the departure of Heindl in 1881, William Schade and Messrs. Henneberg and Rodenberg served as replacements in that order.

Wulf Fries, brother of violinist August, relinquished his position in 1872 to Rudolf Hennig of Philadelphia. Succeeding Hennig in 1879 was Fritz Giese, a twenty-year-old musician imported by the group from Holland. In 1884, Anton Hekking filled the vacancy created by the departure of Giese. About 1876, Alexander Heindl, brother of the flutist, was secured to play double bass with the ensemble, being succeeded two years later by a Mr. Manoly. The position was abolished after Manoly left the organization in 1880.[5]

In the original instrumentation of the group there were two violists, one of whom doubled on clarinet and the other on flute. In this way performances of chamber music were not restricted to compositions for strings only, but often included significant works utilizing a clarinet or a flute in conjunction with strings. This was quite in harmony with the philosophy of the Mendelssohn Quintet Club, which believed, throughout its half century of existence, that the public wanted to hear the best in chamber music of all kinds.

In accord with this concept, it is not surprising to note that on several occasions additional instrumentalists were added so that chamber works in larger dimensions could be performed. For example, on file in the Boston Public Library, which has in existence the most complete file of Mendelssohn Quintet Club programs known to this writer, is a program of the "Eleventh Parlor Concert," which was given in Lyceum Hall in Cambridge, Massachusetts, on April 19, 1861. Included on the concert were Beethoven's *Septet in E-flat*, Opus 20, and *Octet in F*, Opus 166, by Schubert. The personnel of the quintet for this program included William Schultze, first violin; Carl Meisel, second violin; Frederick Zacheler, flute and viola; Thomas Ryan, clarinet and viola; and Wulf Fries, violoncello. Assisting artists were J. Stein, double bass; Mr. Hohnstock, bassoon; and August Hamann, French horn; all of whom were members of the Boston Philharmonic Society.

The popularity and effectiveness of the Mendelssohn Quintet Club in presenting programs of good music is evidenced by the fact that it performed several annual series of concerts not only in Boston, but also in Cambridge, Dorchester, Salem, Lowell, Lawrence, Haverhill, Taunton, Worcester, Charleston, and New Bedford, Massachusetts as well as in Hartford, Connecticut, and Providence, Rhode Island. In 1859 the organization made its first appearance outside the New England States when it visited Philadelphia, Baltimore, and Washington. Four years later, the group made an extensive tour of several midwestern states. The first trip to California and Hawaii, Australia, and New Zealand took place in 1881.

An examination of extant programs reveals that the Mendelssohn Quintet Club must have delighted many American composers by performing, often for the first time, some of their chamber

[5] Ryan, *passim*.

music. Quite naturally Ryan, the real impetus behind the ensemble, was among those included. He was actively engaged in musical pursuits until his death at New Bedford, Massachusetts, in 1903.

Between 1850 and 1851 Ryan arranged three potpourris based upon well-known operas for the Mendelssohn Quintet Club. These appeared frequently on the group's concerts, and evidently were well liked by the public, for some programs indicate that these works were being "repeated by popular demand." On November 21, 1850, at the Masonic Temple in Boston, Ryan brought out his "Eligie [sic] Number One," for clarinet and quartet. Shortly after this, on January 28, 1851, at Lyceum Hall in Dorchester, the *Allegro moderato* and *Andante* movements of his *First Quintet in F,* Opus 5, were presented to the public. The two movements just listed may have been all that Ryan had completed at that time, for it was not until November 24, 1854, at a parlor concert in Professor Agassiz's Boston home, that the quintet was performed in its entirety. The additional movements presented at this time were *Scherzo,* and *Finale: Allegro vivace.*

For the concert given by the Boston Musical Fund Society at Tremont Temple on February 21, 1852, Ryan composed a *Morceau Religioso, Choral, and Prayer* for four violoncelli, which he dedicated to the violoncellist Wulf Fries. The instrumentalists for this first performance were Fries, Theodore Maass, Isaac Morehouse, and J. H. Seipp.

Wulf Fries and Ryan were very close friends. As a token of his affection, Ryan composed and dedicated to Fries a *Concert Piece* for violoncello and piano. Fries and the pianist Ernst Perabo (1845-1920) first presented this work at the Chickering piano rooms in Boston on February 5, 1867. However, this, as well as the other Ryan compositions mentioned, seems no longer to be in existence.

Boston-born Charles Callahan Perkins (1823-1886), before his departure to Leipzig in 1851 to study with Ignaz Moscheles (1794-1870), had the pleasure of hearing the Mendelssohn Quintet Club present his *Septette* for piano, flute, clarinet, French horn, violin, violoncello, and double bass. The program, but not the music, may be seen in the Boston Public Library. Perkins' home was the scene of this performance on January 23, 1851. However, no information is available relative to the performers or to the structural content of the septet.

Two years later, Perkins sent home his *Quartet in A Major,* Opus 8, dedicated to his friend J. C. D. Parker. Given its first performance by the Mendelssohn Quintet Club in December of 1853, the work was published the following year by Breitkopf and Härtel in Leipzig. The copy in the Boston Public Library shows that the four movements of the quartet are designated *Allegro ma non troppo, Andante, Scherzo,* and *Finale: Allegro con brio.* Perkins' *Troisieme Quatuor,* Opus 9, was published by Breitkopf and Härtel in 1854. The issue of this quartet, which is on file at the Harvard Musical Association, indicates that the work was dedicated to the first violinist of the Mendelssohn Quintet Club, August Fries. The quartet is in the key of E Major and contains the following movements: *Allegro non troppo, Romanza, Scherzo and Trio,* and *Finale.* Upon his return to the United States in the Fall of 1854, Perkins was assisted by the Messrs. Fries in the first performance of his *Trio in E-flat Major,* Opus

10. Published the following year by Breitkopf and Härtel, the movements of the trio (copy in possession of the Harvard Musical Association) are *Allegro maestoso, Andante, Scherzo, and Finale: Allegro con spirito.*

James Cutler Dann Parker (1828-1916), a fellow student of Perkins' in Germany, and also a native of Boston, practiced law for three years after graduating from Harvard. He subsequently left for Germany in 1851 to study music. John Sullivan Dwight, noted nineteenth century American music journalist, and close friend of Parker's, stated that the composer was "the first son of Harvard to forsake a dry profession [law] and follow the ruling passion of his life."[6] Parker's *Quartet No. 2 in D Minor* was given its initial performance on December 19, 1854, in Chickering Hall by the Mendelssohn Quintet Club. Still in manuscript, the quartet now is held in the library of the New England Conservatory of Music, and consists of the following movements: *Allegro con moto, Adagio, Allegro scherzo,* and *Finale: Allegro con spirito.*

The ensemble also played, for the first time, Parker's *Third Quartet in F Major.* Presented on March 27, 1860, at New Hall in Bumstead Place, the movements of the now missing quartet, according to a program in the Boston Public Library, were *Allegro, Minuet, Adagio,* and *Finale: vivace.*

A devoted musical amateur, Francis Boott (1813-1904), was born in Boston, and after matriculating at Harvard, lived in Italy for many years where he studied composition with L. Picchianti. Some of Boott's compositions appeared under his nom de plume, Telford. The Mendelssohn Quintet Club played Boott's *Quartet No. 1 in C Major* on October 27, 1854, at a parlor concert in Henry Greenough's residence in Boston. Although the quartet apparently is not extant, a program in the Boston Public Library indicates that it consisted of these movements: *Allegro moderato, Andante, Minuet: allegro,* and *Finale: rondo vivace.*

On November 20, 1862, at Chickering Hall, Messrs. Schultze and Wulf Fries assisted Edward Jerome Hopkins (1831-1898) in the performance of the latter's "Trio in D Minor" for piano, violin, and violoncello. The program recording this presentation, which may be seen at the New England Conservatory of Music, states that the artist assisting the members of the Quintet Club was "*C.* Jerome Hopkins of Vermont," but undoubtedly the program is in error, and should read *E.* Jerome Hopkins. The trio by this composer, born in Burlington, Vermont, subsequently has become lost, but consisted of these movements: *Allegro moderato, Andante religioso, Scherzo,* and *Allegro assai e fughetto.*

German-born Julius Eichberg (1824-1893), an excellent violinist and composer, settled in Boston in 1859 after having immigrated to New York two years previously. In 1867 he founded the Boston Conservatory of Music.[7] Although Eichberg was not a native-born American, he spent the greater part of his energies and creative life in this country, and thereby deserves to be included in this discussion. His *Quintet in B-flat Major* was given its initial performance by the Mendelssohn Quintet Club on New Year's Day of 1861 at Chickering Hall. A program

[6] *Dictionary of American Biography,* ed. Dumas Malone (New York: Charles Scribner's Sons, 1928), XIV, 228.

[7] *Dictionary of American Biography,* VI, 57-58.

in the Boston Public Library indicates that the motto used by Eichberg for this work was, "Sehnen, Trachten, und Sterben," or, to aspire, to strive, and to die. The movements of this nonextant quintet were designated *Allegro, Scherzando, Adagio,* and *Finale: allegro.*

Two members of the Mendelssohn Quintet Club, violinist William Schultze and violoncellist Wulf Fries, assisted Viennese-born pianist Gustav Satter (1832-1879) in the performance of two of his trios, *Sardanapale* [Sardanapalus] and *Conte de Fees* at Chickering Hall on January 2, 1858. Satter toured extensively as a concert pianist in Europe and in the United States, but eventually settled in Savannah, Georgia, where he taught piano until his death in 1879.[8]

The Mendelssohn Quintet Club obviously was friendly toward American composers. After an initial performance it might be expected that these compositions would not appear again on subsequent programs, but many of them were "repeated by request." Thus, New England audiences, in particular, were educated very early by the Mendelssohn Quintet Club to the idiom of American music, even though it seems to have been tinged somewhat with German Romanticism.

America's musical heritage is much richer today as a result of the humble efforts of this devoted and sincere group of professional musicians. They believed in performing music of high artistic quality, not only by European composers but by Americans as well. They engaged wholeheartedly in a tireless crusade in all parts of this country, and in foreign lands as well, to reach people who might not otherwise have had an opportunity to hear the beauties inherent in chamber music.

New York University.

[8] *Baker's Biographical Dictionary of Musicians,* ed. Theodore Baker, 4th ed., 3rd printing (New York: G. Schirmer, Inc., 1940), p. 958.

Elam Ives and the Pestalozzian Philosophy of Music Education

ROBERT W. JOHN

IN 1831 A SMALL BOOK of songs entitled *The Juvenile Lyre* was published by Carter, Hendee & Co., of Boston. In later years, Lowell Mason, who was one of the two compilers of the book, described it as "the first school song book published in this country." The intent here is not to argue this point (as tempting an assignment as that might be), but rather to establish the identity of the second man of this team; for here was a man whose influence in the development of a philosophy of American music pedagogy was much greater than has been recognized. This man was Elam Ives, Jr.

Although Ives published an imposing list of books and art songs during the 30-year period 1830-1860, one can search in vain through standard biographical reference works for more than a short sentence about him. Yet it was he who actually founded in America the musical practice of Pestalozzianism, which was the dominant philosophy of music education in this country during the greater portion of the 19th century. Indeed, many Pestalozzian precepts are still followed in music education today. Ives' early experiments and writings had direct influence on such leaders as Lowell Mason and Thomas Hastings. Before this point is developed, however, let us consider the few facts we are able to piece together concerning the life of this man.

Life

Elam Ives, Jr., was born in Hamden, Connecticut, January 7, 1802. He was the sixth of thirteen children born to Elam and Sarah Ives, and the only one to follow music professionally. Elam, Senior (1761-1846) was a thriving farmer, and later a pioneer in the manufacturing of small carriage hardware in neighboring Mt. Carmel. At the age of 20, Elam, Jr. married Louisa Todd, and it was about this time that he began his work as a church choir director and singing school master. At some later date Ives married a woman we know only as Lucy. He had five children: Augusta, Mary, Emily, Ella, and John Sebastian. How and where he received his musical training and when he moved from his home in Hamden to Hartford is not known, but by the time he was 28 years old he was already established in Hartford. It was here that he was introduced to Pestalozzianism. In late 1830 he moved to Philadelphia, leaving with the Hartford publisher, F. J. Huntington, the manuscript of his latest children's song book, *The American Elementary Singing Book*. Huntington registered the book in the clerk's office of the District of Connecticut in 1831, and it was published the following year. By this time Ives had set himself up as the "Principal of the Philadelphia Musical Seminary."[1] He had hoped for greater suc-

[1]This was obviously a one-man venture. His name is included in the Philadelphia City Directories from 1831 to 1837. He is first listed as a teacher, but from 1833 to 1837 the musical seminary is entered with his name. Three different addresses appear in alternate years for this entry. The Philadelphia Musical Seminary was not listed in the list of institutions included in each issue of the directory.

cess than was probably realized in Philadelphia, for on May 27, 1836, he and his Philadelphia pupils gave a concert in New York's Constitution Hall, and at that concert he announced he was about to remove to New York to establish a musical seminary. During the summer of that year he carried out his announced intent, and by September 1, he was ready to present his New York pupils in concert. This he did at the Lyceum of Natural History, and followed this concert with others through the autumn and winter. It was in New York and Brooklyn that he did the largest portion of his writing and teaching, as he remained there until shortly before his death. It was probably in 1863 that he returned to his birthplace of Hamden, where he died February 10, 1864.

Pestalozzianism

Before discussing Ives' role in the development of Pestalozzianism in school music, it might be well to review briefly the salient points of this educational philosophy and say a word about its place in school music history. In 1801 the Swiss educational philosopher Johann Heinrich Pestalozzi (1746-1827) published a book entitled *How Gertrude Teaches Her Children*, which describes the teaching methods employed by a poor mother (Gertrude) to educate her children. Shortly after this book was published the teaching methods advocated in it were adopted by the schools of many countries. The American educator William C. Woodbridge made several visits to Germany and Switzerland between 1820 and 1829 observing the application of the Pestalozzian philosophy in schools of those countries. Sometime late in the decade while at home in Hartford he apprised the local music teacher — Elam Ives--of this philosophy as he had seen it applied to music instruction in Europe. In essence, the cardinal precepts of the method as modified for music education were these:

1. To teach sounds before signs—to make the child sing before he learns the written notes or their names.
2. To lead the child to observe, by hearing and imitating sounds, their resemblances and differences, their agreeable and disagreeable effects, instead of explaining these things to him—in short, to make him active instead of passive in learning.
3. To teach but one thing at a time—rhythm, melody, expression are taught and practiced separately before the child is called to the difficult task of attending to all at once.
4. To make children practice each step of each of these divisions, until they are master of it, before passing to the next.
5. To give the principles and theory after practice, and as an induction from it.
6. To analyze and practice the elements of articulate sound in order to apply them to music.[2]

It will be noted that some of the principles listed above are still very much a part of current practice and belief.

Ives, Pestalozzi, and Mason

It is generally believed that Lowell Mason was the original musical interpreter of Pestalozzi in this country. That he was one of its most influential early advocates, there is no doubt. However, the first man to put these new precepts to pedagogical practice in music in America was Elam Ives. Al-

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[2] *Grove's Dictionary of Music and Musicians, American Supplement*, p. 333. For a fuller treatment of this subject see Howard Ellis, "Lowell Mason and the *Manual of the Boston Academy of Music*," *JRME*, III (Spring 1955), 3-10.

though Mason learned and received much from this man, he never gave him the credit due him. The only place in Mason's long career that his name is linked with Ives is at the close of the preface of the above mentioned *Juvenile Lyre*. When in later years Mason was to claim this book as the first school song book published in this country,[3] he failed to mention co-author Ives. The fact of the matter is that the lion's share of the book may well have been written or compiled by Ives. The title page of the book contains neither of the co-authors' names. Only the signed preface indicates the compilers. As we shall see, it is entirely within the realm of possibility that Mason wrote the preface and Ives was responsible for the greater portion of the remainder of the book. It is also quite possible that Ives felt Mason had not given him his proportionate amount of credit for the book when it was published.

While records are scanty to prove that friction developed between Mason and Ives shortly after the publication of the *Juvenile Lyre*, there seems to be strong indication that such was the case. Mason wrote many books in collaboration with other musicians and invariably wrote at least two with each collaborator,[4] but only this single work was produced with Ives. On the other hand, Ives continued to publish school books and collections of church tunes for many years after 1831, yet, surprisingly, he apparently never included a composition by Mason in any of these compilations. This is remarkable, because so many of the tune books of the 1835-1860 era *did* include Mason compositions; in fact, it was the rather rare exception that did not. That Ives excluded compositions of Mason seems more than coincidental. Finally, Frank J. Metcalf not only implies the rift, but the possible reason for it. In discussing the works of the poet-musician Deodatus Dutton, a close friend of Ives, Metcalf says, "Mr. Ives tells us that Mr. Dutton versified many of the hymns in this book [the Ives-Dutton *American Psalmody* of 1830], and also he did the same for a book called 'The Juvenile Lyre' issued in 1831 in Boston by Lowell Mason and Elam Ives, ***though he had no credit for his work.***"[5]

The question which immediately comes to mind when considering the *Juvenile Lyre* is how and why did these two men get together to collaborate on this book. In the case of most other collaborators, Mason worked with either personal friends or close professional colleagues. Neither seems to fit this incident, as neither knew the other personally nor had they ever worked together. The answer is the mutual friendship they had with William C. Woodbridge, the disciple of Pestalozzi, mentioned earlier. About the time Ives left Hartford for Philadelphia, his friend Woodbridge also left the same town, but to go to Boston. It was here that Woodbridge befriended Lowell Mason and began persuading Mason to adopt the Pestalozzian concepts of music teaching. It was here also that Mason's enthusiasm was aroused by Woodbridge's account of Elam Ives' work. It seems probable that Woodbridge showed Mason some of Ives' manuscripts based on the Pestalozzian

[3]Lowell Mason, *Normal Singer* (New York: Mason Brothers, 1856), p. ii.

[4]The only exception to this, in which Mason claimed full co-authorship, was *The Cherokee Singing Book* of 1846. George Guess, the co-author, died the year before the book was published.

[5]Frank J. Metcalf, *American Writers of Sacred Music* (New York: The Abingdon Press, 1925), p. 248. Italics mine.

system. Ives, by his own admission, was having some difficulty in having his works published, as he stated in 1831 that of the ten books he had written, only four had been published. Mason, on the other hand, was already a well-known musician and writer, by virtue of his presidency of the musically influential Boston Handel and Haydn Society and authorship of the immensely popular collection of church music bearing the society's name. Under such conditions, Ives would have been pleased to ally himself with this well established "name."

Before leaving the *Juvenile Lyre* it is interesting to note a few unusual facts about the book itself. First, it was without the usual "instructions" or musical catechism which was ordinarily found at the beginning of such books. It is possible that this omission was at the insistence of the publisher, because he had published a similar book the year before which also omitted this introductory material.[6] However, it is also possible that the bulk of the material of the *Juvenile Lyre* was a group of tunes Ives had planned to use as a latter part or sequential volume to his *American Elementary Singing Book*, as there seems to be a remarkable degree of continuity between the last songs in this book and those at the beginning of the *Juvenile Lyre*.

In his *American Elementary Singing Book* Ives does not introduce 3-part tunes until he has "inductively" brought the pupils through a series of 27 numbered lessons, each lesson consisting of questions and answers, observations and examples. From lesson 28 (page 84) to the end of the book (page 108) all the tunes used to illustrate the lessons are in three-part harmony (SAB). The *Juvenile Lyre* begins with the same type of short secular three-part songs. All of the 60 tunes in the *Juvenile Lyre* are similar in form and style except the last one. This one, an anthem entitled *"Suffer Little Children to Come Unto Me,"* is of a completely different nature. This anthem was written by Mason for his children's choir, and was performed by them at the Park Street Church on July 4, 1830.

A second feature which seems to tie the tunes of the *Juvenile Lyre* to Ives' *American Elementary Singing Book* is the suggested use of an instrument to accompany (or at least "play with") many of the tunes.

Beginning with the 3-part songs in the *American Elementary Singing Book*, Ives advocates the use of instruments. Many of the SAB songs of the *Juvenile Lyre* have definite instrumental bass parts and are so indicated. The writer is not aware of any other book by Mason in which the word "instrument" was printed above the bass line. In most all of his works, Ives put considerable stress on accompaniments. Such was not the case with Mason. Apparently Ives considered himself to be an instrumentalist as well as a singing master. Certainly this was true in later years, for he is listed in the *American Musical Directory* for 1861 as a teacher of pianoforte, violin, and singing, in that order.

Neither man, of course, could rightfully claim full credit for the authorship of the three-part tunes of the *Juvenile Lyre*, as most of them were of European origin, and so designated in the book's preface. The question is one of whose "arrangements" were used, Mason's or Ives'. In later, separate publications of these men, neither seemed to

[6] *The Child's Song Book, for the Use of Schools and Families* (Boston: Richardson, Lord, and Holbrook, 1830). This anonymous work is thought to be by Augusta Peabody.

use much of the material of the *Juvenile Lyre*—which again is unusual when one considers how freely nineteenth century music book compilers used borrowed works of previously published works. The only place the writer has found any of the tunes of the *Juvenile Lyre* in appreciable numbers is in the rare *Young Minstrel* of 1837, which Rich believes was done by Timothy Mason, the brother of Lowell.[7]

The Hartford Experiment

Birge[8] has indicated that the first attempts to teach music using the Pestalozzian precepts were made by Ives in Hartford in 1830 but immediately dismisses the matter because no records are available to assay the results. Rich claims the experiment was hastily arranged and was disappointingly inconclusive. He further states that Ives "had had insufficient time to digest either the Pestalozzian principles or the teaching methods Woodbridge tried to describe to him."[9] Neither of these statements is entirely accurate, as we shall see.

It is possible that Ives may not have had a reading knowledge of German, and therefore did not read the original works of Pfeiffer, Nageli, and Kuebler which Woodbridge had brought back from Europe. Further assuming, as Rich implied, that everything had to be told to him by Woodbridge (a questionable assumption when one reads the rather positive statement about German books Ives makes in the quotation below), the undeniable fact is that within a few months after the Hartford experiment Ives had in the hands of the Hartford publishers the manuscript of his *American Elementary Singing Book,* which is a concise manual on Pestalozzianism. In fact this was probably the first music book written in America advocating the Pestalozzian principles. Not only did Ives understand these principles, but in later years pointed out the perversions of the philosophy which developed in later interpreters. In 1854, John W. Moore, speaking of Ives said,

> In his system he makes do, re, mi, fa, &c., stationary on the staff, and considers the use of these syllables, thus, preferable to that of transposing them along with the changes of the key, or diatonic scale. He says the transposition of the names do, re, mi, &c., never was practiced in German. Neither the system of Pestalozzi, nor any other book or books of German origin, ever contained the plan of solfaing by transposition, nor anything like or equivalent to the same, in any shape or form whatever. Mr. Ives also asserts that the so-called Pestalozzian system . . . was compiled from the method adopted at the Fellenberg school, at Hoffwill, and was brought thence to this country by William C. Woodbridge. This Hoffwill system was never adopted by the musicians of Germany, but was repudiated by the professor at the Fellenberg school, when Mr. Woodbridge was there.[10]

It seems evident from the above that Ives had a clear understanding of both the principles and history of Pestalozzianism, and the means by which he acquired this knowledge are of little consequence.

While it is true that a first-hand account of the Hartford experiment of the summer of 1830 has not been found, it is known that the experiment had considerable influence on the adoption

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[7]Arthur L. Rich, *Lowell Mason* (Chapel Hill: University of North Carolina Press, 1946), p. 187.

[8]Edward B. Birge, *History of Public School Music in the United States* (Boston: Oliver Ditson Co., 1928), p. 37.

[9]Rich, p. 15.

[10]John W. Moore, *Complete Encyclopaedia of Music* (Boston: Oliver Ditson Co., 1854), p. 770.

of Pestalozzianism by others, and the work of Ives and these Hartford children was known by many musicians. No less a leader than Thomas Hastings of Utica, New York, was completely convinced—even at that early date—of the merit of the Pestalozzian system. In a little known work by Hastings entitled *The Juvenile Instructor*[11] (written less than six months after Ives' Hartford experiment), one reads of his enthusiastic endorsement of the Pestalozzian system and Ives' contribution. Only a small portion of his account is extracted here:

> We have before us a scientific German production, which seems to put the matter [of teaching music to children] entirely at rest. And what is better, we are authorized to state, that some of the leading principles of this writer have very recently been reduced to practice in this country, by Mr. Ives, an enterprising teacher, now laboring in Philadelphia, in a manner which is perfectly satisfactory. It is now rendered entirely certain, therefore, that young children, almost without single exception may in time be brought to sing with a good degree of accuracy. This fact is no less important than true, and at the time when elementary education is becoming a matter of so much interest, it is to be presumed that the importance of early musical cultivation, will not be overlooked or disregarded.

Had the course of history been such that Elam Ives had received the credit due him from all of his associates for the vital role he played in shaping the philosophy of music pedagogy in America, he would now be hailed as one of the great champions of school music history, instead of being almost totally lost in oblivion as he has these many years.

North Carolina College at Durham.

[11]The only place this book has been found is appended to the 9th edition of Hastings' *Musica Sacra* of 1831. The book, however, does have a separate registration in the office of the clerk of the Northern District of New York. The 9th edition of *Musica Sacra* was registered on November 29, 1830, and the *Juvenile Instructor* on December 11, 1830. The quoted passage is from p. 290.

Reviews

EDITED BY THEODORE F. NORMANN

Foundations and Principles of Music Education. By Charles Leonhard and Robert W. House. New York: McGraw-Hill Book Co., 1959; vi, 375 pp.; $6.00.

The authors of *Foundations and Principles of Music Education* declare their intent to present "a systematic treatment of the total music education program." In pursuit of this objective they examine the historical, philosophical, and psychological foundations of music education on somewhat the same general plan as recently appeared in the Fifty-seventh Yearbook of the National Society for the Study of Education entitled *Basic Concepts in Music Education*. From this scrutiny is developed "principles for all aspects of the operation of the music program including program development, methods of teaching, administration, supervision, and evaluation." This is a very large order indeed. It involves intelligent understanding of the controversies presently centered around public education; a comprehension of the nature, function, and purpose of art in general and of music as a related part; some grasp of the problems students will face in this complex civilization of ours; and an ability to synthesize these various aspects into an intelligible whole. In this comprehensive and difficult task it can be said that the authors come off with commendable marks on some aspects of their study, not so high on others, and that they have written one of the important books on music education of the past decade.

The real kernel of this text lies in that section which discusses the foundations of music education—objectives, processes, principles, philosophy, history, and learning theory. With an editorial skill reminiscent of *The Reader's Digest*, the authors have compressed each of these topics into thirty-five pages or less. In the process they have relied heavily upon NEA publications for material on objectives, upon John Dewey, Leonard Meyer, and Susanne Langer for philosophy of art, and upon Ernest Hilgard and the 1950 and 1958 Yearbooks of the National Society for the Study of Education for theories of learning. These are reputable authorities. References at the close of each chapter are carefully selected to induce the reader to seek further information. The interpretation of professional educational literature in terms of music education is, for the most part, consistent and thoughtful. The conclusions and inferences suggested carry some significant implications for music education.

What are these implications? It is believed that "a guiding principle for the formulation of program objectives is to analyze the behavior of a musically educated person and to state specifically the knowledge, understanding, attitudes, appreciations, skills, and habits it is desirable and feasible to develop in the course of the total program of music education." The core around which the music program should be centered in the public schools is to be found in General Music. "The task of the school music program is essentially to organize a musical environment in which every pupil can undergo the maximum musical growth consistent with his ability and interests." Such growth can take place most effectively through providing musically significant experiences. The focus should always be toward bringing out and sensing the expressive elements inherent in music of worth. The music program, therefore, must first of all be based upon purely musical values—"to develop the innate musical responsiveness of every individual to the highest possible level and to nurture and expand this potential for aesthetic experience."

It is believed that reliance upon instrumental values (music as a vehicle to develop personality, health, sound work habits, better home membership, etc.) will pervert and distort the art of music, leading to a debasement of its true and enduring values. In common with some "progressive" educators, the authors believe that the school music program has a mission to change the social order—to save the public from "musical delinquency." It is believed that with the abandonment of the uniform course of study, music education has gone to an opposite extreme and "often exhibits a perilous lack of unity and coherence."

These few sentences give but a fragmentary and incomplete insight into a book as highly compressed and condensed as this. Individual chapters are actually digests of the topic under consideration and usually end with a short summary of the major principles or ideas to be retained. There is no separate treatment of grade or maturity levels and no chapter is devoted to such individual aspects of the subject as performance or listening.

Inevitably in a book of this scope there will be omissions and statements to which readers may take exception. For example, much of the material presented on objectives in Chapter I is drawn from the 1946 report of the Educational Policies Commission. It can be argued that this is no statement of objectives at all but rather a potpourri of miscellaneous thoughts and impressions put together to please all members of the Commission. Nowhere do the authors take cognizance of the issues which are being so warmly debated today with respect to public education—issues which inevitably affect programs of music education.

What appear to be contradictions may puzzle the reader. On page 75 the authors declare, "The passing years have seen a steady decline in the quality of music filling the radio and television channels." On page 60 they indicate that "it would seem that there is little need to despair of the present level of public taste as compared with former times"; on page 62, "music teaching has become more effective on the whole because the profession has reached a certain level of sophistication." But on page 98, in speaking of the teacher's role, we are reminded that "the reliance on instrumental values has provided cover for appallingly scanty musical achievement, minimal standards of learning, and shockingly low musical standards." This reviewer has some difficulty in accepting such statements as "The objectives of performance in school music are not the same as those of the private studio. The idea is not to emphasize performance per se but to view singing and playing as means to developing broad musicianship." Further puzzlement results if one compares this quotation with the one from page 98 above or the following appearing on page 360: "The (music) program promotes constructive relationships with private teachers in the community."

But differences of a far more fundamental nature appear in points of view within the text itself. The authors do not seem to have thoroughly resolved between themselves the place and function of music in society. They make no attempt to analyze, in any helpful degree, those forces which play upon each individual in this industrial civilization of ours nor to trace those vestigial inheritances from earlier times which lead to much of the confusion which surrounds one's approach to the fine arts. Without calmly facing and resolving the basic differences between "art for art's sake" and "art for people's sake" and defining clearly and precisely one's position, it is doubtful whether a philosophical position can be taken upon which one can construct a program of music with consistency and logic. This difficulty appears as a recurring problem throughout the text. One manifestation of it is the reluctance of the authors to discuss in any detail those aspects of music education which lie beyond the four cozy walls of the schoolroom. To be sure passing mention is made of the desirability of music in the home and on page 114 a broad aim of music is said to be the creation of a society whose members use music more fully in daily living. But the authors do not appear to be concerned with exploring this aspect and are content to limit their discussion to school music. School music is by no

means synonymous with music education. No real study is made of the disparities presently existing between school culture and community culture, nor is it made clear to what degree and in what ways the interactions between school, home and community inevitably affect the musical attitudes and desires of the student himself. Is it possible that the authors may have taken too much shelter within their professional educational textbooks to the neglect of other equally or more important sources of information?

It is, of course, physically impossible to cover in 400 pages either adequately or with any real degree of comprehensiveness, the wide scope of the thesis the authors have here attempted. It would take the wisdom of Solomon and the insight of a saint. Possibly some of the later chapters might have been sacrificed as being of lesser significance to enable the authors to give more than a page or two to topics of such crucial importance as creativity.

Despite these and other reservations, this is a book which will give one a quick overview of the principal aspects of educational music as seen from within the confines of the public school. It provides a resumé of some of the critical problems being faced today, though by no means all of them, and it suggests some basic principles for the sound operation of a school music program.

Theodore F. Normann

Music in the Elementary School. By Anne E. Pierce. New York: Henry Holt and Company, 1959; xiii, 239 pp.; $4.75.

Miss Pierce has given music educators a useful and interesting addition to the ever-increasing list of professional books intended to improve the teaching of music in today's schools, and one that reflects a wealth of experience combined with a knowledge of present-day educational philosophy, trends, and practices as revealed both in the classroom and in professional literature. Result: a book that should help many teachers better understand the scope and content of the elementary music curriculum.

Early in the presentation of her material, Miss Pierce takes a definite stand regarding children, music, and learning when she states, "From the very beginning children should learn from their music lessons, for pupils can serve neither themselves or others without knowledge and skills." Later in the same discussion this statement is balanced by the expression of the belief that information and skills are less important to children than "the creation . . . of a sensitivity to music and what it has to offer."

In the chapter entitled "The Music Teacher" some specific suggestions are given on such matters as lesson plans, classroom management, and the often-heard questions as to whether the male teacher of elementary school children should sing *falsetto*. The author sensibly disposes of this by saying, "Boys and girls hear male singers out of school and they expect a man to sing like a man." Suggestions on effective use of the male voice in the classroom follow this statement.

The chapter on singing has a particularly good discussion of "Inaccurate Singers." Included are most of the well-known explanations and remedies, plus helpful approaches to working with the inaccurate singer, enabling him both to feel at ease and to grasp basic musical concepts. In this discussion the author's knowledge of vocal techniques is applied, as well as her understanding of the psychological problems confronting inaccurate singers:

"Some techniques used to help children find their singing voices appear to be of questionable value. For a teacher to sing directly into a child's ear or to press her hand upon his head may annoy rather than help. To ask a child to reproduce a skip of an octave when that interval is not within his range may dishearten him. So, too, the direction 'sing higher' is usually ineffective, for the child may merely raise his chin and tense the vocal organs without changing pitch. To have a child imitate the squeal of a mouse . . . may stimulate his imagination and reveal that he can produce high pitches, but it is difficult . . . to change these sounds into musical, singing tones. To tell children not to sing because they cannot 'carry a tune' or to whis-

per but not to sing does not establish musical or emotional security, nor will such procedures ever overcome vocal handicaps."

The practice of grouping children according to their singing ability receives an equally frank appraisal when the author states that although the less competent singers are generally placed toward the front of the room so they can hear the better voices, this usually results in their hearing ". . . only more of their own type of singing." Constructive suggestions for helping insecure singers are a strong feature of this chapter.

Many suggestions for selecting and presenting songs are included and discussed in chapter five. Detailed consideration of part-singing development includes methods of building readiness, dividing classes into sections for singing parts (here recognition is given to the importance of having pupils shift parts), and hearing tonal relationships. The paragraphs on accompaniments mention many ways of accompanying, and also note the possible misuse of accompaniments:

"When the teacher plays the piano (or any other instrument) well, she may be inclined to use it to excess. She may, in fact, sometimes use it to conceal teaching weakness. . . . use any instrument only when it contributes significantly to the song or when it is the best way of presenting a song or solving some musical problem."

Warning is given to the accompanist who allows pupils to become dependent upon the piano, not listening to themselves or the music. The importance of musical use of the instrument is repeatedly stressed. Noting that voices tend to take on the qualities of the accompanying instrument, the author reproves piano thumpers and pedal holders, as these practices adversely affect the quality of children's singing.

Many readers will be vitally interested in the discussion of music reading. The author shrewdly approaches the topic by noting that it is usual to begin the study of notation in the second grade, then citing differences of opinion with regard to the grade placement of beginning notation study, going back to the opinions of Surette (in 1917 his opinion was that music reading should be postponed until the latter part of third grade), Davison (in 1926 he felt that music notation and children should not meet for serious study during the primary grades), and Kwalwasser (about the same time he favored "the complete abandonment of all note-reading drill for the first three grades for all children").

As in other chapters of the book, emphasis is kept on the musical function of the score. This is an important and well-placed emphasis, since too often the study of notation proves to be mechanical and nonmusical. While the author does not take a stand on any particular grade for the introduction of the musical score, she does include a thorough discussion of reading readiness and guiding principles where music reading is concerned. Many useful suggestions are given for developing skill in this area.

Throughout the book the reader is aware of an intelligent concern for children's growth and development in all areas. The chapters on listening to music, correlation with other subjects, creative music, special programs, as well as the early chapter on the pupil, all reveal this basic concern.

Many passages of the book are illuminated by quotations from actual classroom experiences. These passages will be helpful to all teachers, but particularly to the less experienced members of the profession.

Lists of materials and suggestions for building and presenting programs are included in later chapters.

The reader who conscientiously absorbs and puts into practice the many excellent suggestions of Miss Pierce should have no difficulty in noting immediate results in terms of pupil interest and musical achievement. The publication is a valuable contribution to the professional books in this area.

Frances M. Andrews

Children Discover Music and Dance: A Guide for Parents and Teachers. By Emma Dickson Sheehy. New York: Henry Holt and Company, 1959; 282 pp.; $4.25.

The author is well known as a successful classroom teacher who has music and dance as special interests. Since 1946 she has taught

at the graduate level at Teachers College, Columbia University. One of her earlier books, *There's Music in Children,* found favor with parents and music educators, and this later book is based in part on the earlier one.

It is concerned with children's understandings and uses of sound and movement. Adults are reminded of ways children deal with these instinctual elements which are so naturally vital to them, so that parents and teachers might recognize and nurture natural impulses. The author claims that adults are prone to "educate the children out of" their rightful potentialities because they fail to understand children. Her purpose is to reduce the distinction that "too frequently exists between the child's world of music and dance, and music and dance as conceived of by many adults." She hopes we might "establish a fresh acquaintance with these arts."

The point of view is that of the classroom teacher; however, music educators cannot afford to ignore this book. To this reviewer, its most impressive aspect is its emphasis upon creative elements and sources—the sum total of which is far greater than in any like book he knows. While it is true, as other writers have stated, that the parent and teacher should provide an environment which will make it possible for the child to discover and develop his natural potentialities, Mrs. Sheehy goes on to describe how this might be done, and to state many revealing examples of children's creative activities and how adults might encourage them.

In common with other educational writings, the thorny problems concerning the innate and acquired abilities necessary to teach classroom music successfully, and the extent to which teachers' individual differences should be permitted to result in unbalanced music programs, remain largely unsolved. However, this in no way detracts from the values of the book. Mrs. Sheehy wants both the classroom teacher and the music specialist active in the music program.

The freedom of Mrs. Sheehy's approach might lead some college teachers to experiment with the book in methods classes, although there is no claim that she intends such use. It is written more specifically for parents and teachers-in-service who need a fresh approach to music and dance.

The book is easy to read, stimulating, and even exciting. The many references to specific songs and recordings are valuable.

Robert E. Nye

International Listing of Teaching Aids in Music Education. Edited by Egon Kraus. Cologne, Germany: International Society for Music Education (Distributing agent: Möseler Verlag, Wolfenbüttel, Germany), 1959; 52 pp.; $1.50.

For those who may be interested in comparative music education as a new and expanding field of investigation, this listing of teaching aids from thirty-one countries over the world will prove indispensable. The publication contains entries classified under the following headings: "Books on Music Education, Periodicals and Professional Journals, Programmes and Curricula of Study." The bibliography contains only those materials concerned directly with instruction in music which have been published since 1945. A few exceptions are made in instances of books which are still widely used in the country concerned.

No claim is made that the listings are complete and there do exist some serious omissions. For example, South and Central America are represented by Brazil and Chile and only by listings of professional periodicals. But in spite of certain obvious shortcomings, the International Society for Music Education deserves high praise for making a notable effort to secure in this initial printing as many entries as possible. It can be assumed that subsequent issues will enlist greater international cooperation in a compilation that is exceedingly difficult to secure. The present list, it may be noted, represents a considerable expansion over a preliminary effort in this direction three years ago.

Of some interest is the fact that approximately one third of the bibliographical listings are from the United States. Among periodicals entered are all of the MENC state music

education magazines. The extensive listings of books and courses of study from this country should prove rather impressive to those who are not familiar with music education in the United States. Translations of all titles are in French and English.

Other materials pertinent to international music education have been prepared under the auspices of ISME, notably a *Catalog of Audio-Visual Aids in Music Education* and an *International Catalog of Contemporary Music for the Use of Amateurs and the Young* (*Symphonic Music*, 1880-1954), both of which represent initial steps in a movement of profound significance in world-wide communication in music education.

Theodore F. Normann

Jews in Music. By Artur Helde. New York: Philosophical Library, 1959; xi, 364 pp.; $5.00.

Under a grant from the Department of Cultural and Educational Reconstruction of the Conference of Jewish Material Claims Against Germany, author Helde has provided us with a study of the contribution of Jews to music in Western civilization. Since at least a dozen books in the English language, not including four on the music of Israel, have been published within the past decade, the appearance of a new publication indicates a concern of more than passing interest.

Jews in Music is divided into two major sections one devoted to Jewish sacred music, the other to the contributions of Jews to secular music. The former describes in four interesting chapters aspects of religious music connected with formal worship: the role of the chazzan (cantor), the difficulties of preserving a tradition when much of the music was the private possession of a few, the effect of segregation of the Jews, disputes pertaining to purity of style and attempts to preserve it in written form, and a description of important musicians connected with the synagogues. A selected anthology of works pertaining to Jewish sacred music and a catalog of recordings of Jewish music are important chapters in this opening section.

Jewish secular music describes those who have made important contributions to music in the role of composers, conductors, soloists, musicologists, and opera singers, in *Yiddish Singspiel*; and as contributors to foundations, organizations, and institutions. Much of this material is to be found in other published works. In separate chapters a brief account is given of Nazi persecution of Jewish musicians, of music in the young and enterprising state of Israel, and of the possibility of the development of a distinct Jewish style of music. The chapter on Nazi persecution opens old wounds. Whether or not these should be allowed to heal is a moot question. The material on Israel is well condensed and forms perhaps one of the most interesting discussions in the book. Mr. Helde has his difficulties in attempting to isolate a distinct Jewish musical style independent of the synagogue. A number of composers are mentioned but, except in instances where the composer has been thoroughly grounded in orthodox faith as in the case of Ernest Bloch, his efforts appear to be rather futile.

When Mr. Helde discusses those matters directly pertaining to music in connection with religious services, when he describes the vigorous musical life of the new nation of Israel, he is on firm and solid ground so far as his subject matter is concerned. The same cannot be said of the cataloguing of Jewish musicians of stature in Western civilization for, quite beyond the question of possible duplication of the efforts of others who have tilled this ground, lie a number of serious and significant issues. When is a Jew not a Jew? Since the author disregards religious grounds in his classifications, he is left with the questionable assumption of individual racial characteristics which, no matter what the cultural accumulation may be, marks the Jew as a member of a distinct race. While making the claim that only those who have fifty percent or more of Jewish blood are admitted to his classifications is it not extremely difficult if not impossible to actually prove this contention? If Jews rightly resent the fallacy of Aryan superiority which led to the Nazi atrocities, is not an espousal of the superiority of Jews in music as a distinctive

racial contribution another side of the same coin? To infer the doctrine of racial superiority on the basis of inherited characteristics, whether they be musical or otherwise, flies in the face of a considerable degree of scientific evidence to the contrary. How can the contention be proved? Aside from this any such thesis merely serves to perpetuate a myth which the Jews, above all others, should realize has led to innumerable distortions of human relationships.

Theodore F. Normann

Manual of Bel Canto. By Ida Franco. New York: Coward-McCann, Inc., 1959; xviii, 136 pp.; $10.00.

Probably no branch of music arouses more controversy than the study of voice. Most will agree upon basic principles and objectives to be attained. But the manner of attaining these is dominated by the problems of student-teacher rapport and the difficulties of dealing with the "unseen."

The first section of *Manual of Bel Canto* discusses the development of vocal technique. Here the author carefully outlines aspects of the singing voice, but does not offer any methods of approach which can be learned independently of a teacher. For example, major emphasis is placed upon the concept that "the voice is placed above the breath and anchored in the chest." Any number of interpretations could arise from this. However, the author many times in the *Manual* states that various aspects of singing cannot be learned except by imitating a "good" teacher. And so we are back to the individual teacher and the inevitable controversy. One must then regard the section on technique as a compendium of terms used in the study of voice. It is outstanding in this respect.

The second section of the book deals basically with the technique of bel canto. The ideal of bel canto is clarified, and there are included excellent exercises and examples in the execution of embellishments and various dynamics required in singing. Here again, the comprehensive outline of terms is most valuable.

The last part of the book contains a survey of the place of the *castrati* in bel canto, and gives biographical notes on the outstanding performers of this group.

One particularly interesting point is the separate attention given to the Negro voice. In the chart on registers different notes are included, and exercises and advice throughout the book make a distinction between the Negro and the white singer. No scientific study is included to back up the information which no doubt comes from the author's observations in teaching. This is certainly worthy of further investigation.

Iris Jones

Jean Sibelius. By Harold E. Johnson. New York: Alfred A. Knopf, 1959; xvii, 286 pp.; $5.00.

Few composers have been more enthusiastically overrated and underrated than Jean Sibelius. In 1936 Constant Lambert hailed him as the most important writer since Beethoven. But this rating had already been surpassed the previous year when listeners to New York Philharmonic broadcasts voted Sibelius their favorite symphonist—with Beethoven, to be sure, a close second. On the other hand Virgil Thomson states, "I realize that there are many sincere Sibelius lovers in the world though I have never met one among professional, educated musicians." And René Leibowitz produces an article entitled, "Sibelius, the World's Worst Composer."

It is easy to see that there is a middle way between these opinions, but for an objective, authoritative, and highly readable appraisal Harold Johnson's biography is absolutely indispensable. Those with too great a sense of proportion to accept the deified or vilified Sibelius images of the past will welcome the author's "attempt to reduce him to mortal stature" and have a greater appreciation of the solid Sibelius that remains. The self-estimate that Johnson quotes with the greatest approval, Sibelius is said to have made during a visit to Germany: "Here abroad you are manufacturing cocktails of all colors, and now I come with pure cold water."

While Cecil Gray asserts, "Sibelius is predominantly, even overwhelmingly Swedish,

not Finnish" and others repeat the legend that "Sibelius was descended primarily from uneducated Finnish peasant stock," Johnson effects another compromise, establishing the composer as a Swede-Finn of the middle class.

Some cherished legends have to be relinquished, for instance, that *Finlandia* was regarded in Finland for many years as "the forbidden work." The picture of "the solitary Finnish genius living in self-imposed isolation" at Jarvenpaa has to be abandoned. As the biographer points out, Sibelius could reach his favorite Helsinki restaurants in a few minutes by train, and he continued to visit the great cities of the Continent whenever he could afford it.

No complete explanation is offered for the composer's silence during the last thirty years of his life. "From a musical point of view, it may be said that he died in 1926 after composing *Tapiola*." The reader is tempted to reflect that while surely more governments should subsidize more great composers, they would do well to provide contracts rather than largesse. The story of the supposed "Eighth Symphony" and how it never materialized is a sad one.

Sibelius was constantly denying his indebtedness to anything or anybody. Of his friend Kajanus, famous for promoting and interpreting his music, he is quoted as saying, "I have never asked for advice from him nor, for that matter, from anyone else." Yet as Johnson points out, some years earlier he acknowledged Kajanus as "mein Lehrmeister." While he insisted, "The thematic material employed in *Finlandia* . . . is my own invention." Johnson says that the opening measures of the hymn-like tune in this work are a note-for-note duplication of a composition, *Arise, Finland!* composed eighteen years earlier by Emil Genetz. But in the composer's most sweeping and striking denial Johnson supports him, agreeing that "no one has been able to prove that he actually employed Finnish folk melodies in his symphonies and tone poems."

Relative to the inflamed political upheavals that involved Sibelius and his music, Johnson makes apposite quotation from the chief non-musical item in his bibliography, *Finland* by J. Hampden Jackson, (1940).

Twelve well chosen illustrations give an immediate flavor of Sibelius, his companions, and his period. The careful list of compositions, giving special attention to dates of revision, is a reference work in itself.

The bibliography is valuable as a whole and noteworthy for Johnson's own articles on Sibelius accepted by Finnish periodicals during his two years as a Fulbright Research Scholar to Finland. Johnson's background as librarian, Cornell University student, recipient of a doctorate at the University of Paris and Fellow of the American-Scandinavian Foundation gave him exceptional qualications for the scholarly work he undertook, and he has fulfilled his undertaking with a biography that can be truly called definitive.

Henry Leland Clarke